

NOMINALIZING TRANSFORMATIONS
IN HELLENISTIC GREEK

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PREFACE

My interest in the study of New Testament Greek grammar began when I entered M. Div. studies at the Associated Menonite Biblical Seminaries. Among my most enjoyable seminary classes was the first year of required Greek taught by Gertrude Roten. I thank her for instilling in me a fondness for the Greek language that grew into the basis for my doctoral dissertation.

The opportunity to nurture that growth at the Graduate Theological Union was provided by the Church Divinity School of the Pacific, and especially by Professor Edward C. Hobbs. During my years of course work with him and six years as Teaching Fellow under his supervision, he generously shared his linguistic insights about the nature of language and his conviction that Noam Chomsky's theory of language had profound implications for the study and teaching of Greek grammar. These implications became concrete in the summer language school at CDSP the past four years, where Teaching Fellow Irene Lawrence and I worked together with Professor Hobbs on *An Outline of a Transformational-Generative Grammar of Hellenistic Greek*. I am grateful to them for that learning experience, out of which emerged the shape of this study.

I would also like to acknowledge the research support which made possible my contributions to that *Outline Grammar*. Thanks to the generous gift of Mr. Thomas E. Cummins and a matching grant from I.B.M., a Hellenistic Greek Linguistics Project was initiated by the Center for Hermeneutical Studies in Hellenistic and Modern Culture, under the direction of Professor Hobbs, and with Lawrence and myself as Research Fellows. The work of that project, as reflected in the *Outline Grammar*, is the framework within which I undertook my dissertation studies.

The dissertation itself owes much at every stage to the generous manner in which Professor Hobbs has offered his time and attention, from helping to formulate the first outline to carefully directing its finish, all the while letting it be my own endeavor, which, needless to say, resulted in my own conclusions. Thus, I express my sincere gratitude to Edward Hobbs.

However, many other persons have also been important to this dissertation. First of all, I want to thank the other readers: Julian Boyd, University of California, Berkeley (also for his seminar on AUX), Michael Guinan, Franciscan School of Theology, and Wilhelm Wuellner, Pacific School of Religion, who were all very supportive and always asked helpful questions and made constructive suggestions.

I also want to acknowledge the help of many staff people, especially Barbara Arnold and Elizabeth Over at the GTU, Billie Gendron at the GTU Library and Esther Davis at CDSP.

Finally, for the encouragement I have received since the day we first met in Greek class, and for making these last dissertation years enjoyable ones, I especially thank Babs Marie, for being a good student, a faithful friend and a loving wife.

INTRODUCTION

The study of grammar in the modern era has gone through several momentous periods, and each one has been conditioned primarily by a preceding change in linguistic theory. In each case the change has occurred rather suddenly and has had a revolutionary effect on the study of grammar. The study of Hellenistic Greek grammar has followed this same pattern, though always one revolution behind that in linguistics.

The current revolution in linguistics has significantly altered our understanding of syntax. There are only a few basic syntactic constructions (phrase structure rules) which are universal to all languages. However, each language develops its own (transformational) system for allowing one phrase structure to function syntactically in another (as an embed). This offers the first comprehensive linguistic theory for explaining the formation of complex sentences as a series of embedding transformations.

We begin our study with a look at the major Hellenistic Greek grammars that have been in use during the past century and at the linguistic framework upon which each is built. The current ones are all products of 19th century linguistics, including the one most widely used in scholarship, De-

brunner's edition of Blass. A classical philologist recently addressed the question, "What happened to New Testament Greek grammar after Albert Debrunner?" and could only conclude, "Today research into post-classical Greek in general and NT Greek in particular has come almost to a standstill."¹ Contemporary linguistics can provide the stimulus for revitalizing the study of New Testament Greek grammar in the way it has done for many other languages.

In the second chapter we present the development in contemporary linguistics of Noam Chomsky's transformational-generative theory of grammar, from its antecedents in structuralism to its "extended standard theory" version. Our focus is particularly on that part of the syntax which covers embedding transformations.²

Transformational-generative grammar is the basis, then, for our investigation in the last chapter of one type of embedding transformation in Hellenistic Greek, namely, nominalizations, i.e., embedded sentences functioning as noun phrases. We seek to formulate the nominalizing transformations that are part of Hellenistic Greek grammar. We are primarily interested in the New Testament authors, but the transformations are those used by all Hellenistic writers (excluding clearly Atticizing or Semiticizing constructions).

Having demonstrated the effectiveness of transformational generative grammar in explaining nominalizations in Hellenistic Greek, we will have thereby indicated the need for a new Hellenistic Greek grammar and an important direction in which research could continue.

How we understand the structure of human language in general and how we understand the syntax of a particular language have a direct impact on all the hermeneutical questions that apply to studying texts written in that language. Since the methodologies involved in New Testament studies frequently appeal to "linguistic evidence" in support of much of their work, the linguistics of Hellenistic Greek grammar is not peripheral to the discipline of New Testament hermeneutics. The practical implications of this are indicated in the various ways we apply those methodologies in our use of New Testament references--in textual criticism, source analysis, stylistics, translation and interpretation. Concrete studies in each of those areas would benefit from an advance in our understanding of the language of the New Testament.

CHAPTER ONE

THE PRESENT STATE OF THE STUDY OF HELLENISTIC GREEK GRAMMAR

The study of Hellenistic Greek grammar has passed through several distinct phases in the modern era (as the Introduction points out), and in each case the change has been occasioned by a new linguistic development. However, the new approach usually was first applied to Classical Greek before it influenced the study of Hellenistic Greek (HG). Thus by the time a new "revolutionary" grammar appeared for HG, its linguistic basis had been superseded by another revolution in linguistics, making each such grammar anachronistic from its inception.

The major HG grammars of the last two centuries have followed in the wake of three linguistic periods: (1) rationalist, in the first half of the 19th century, (2) comparative-historical, in the second half of the 19th century, and (3) structuralist, in the first half of the 20th century. Meanwhile, linguistics has since encountered another major revolution: transformational-generative (discussed in the next chapter). We will look briefly at these three periods in the study of HG grammar.

A rationalist theory of language, which has been associated with Descartes,¹ became dominant in the 17th century. It is best exemplified in the French Port-Royal *Grammar*.² It was over a century before such a rational investigation was applied to Greek by Gottfried Hermann,³ and another two decades before George B. Winer incorporated Hermann's approach into a grammar on New Testament Greek.⁴ Winer's grammar dominated the field in the 19th century and became the first widely-used New Testament Greek grammar.⁵

Our interest in Winer's rational grammar goes beyond its historical significance, however, since Chomsky claims that the Port-Royal *Grammar* was essentially proto-transformational-generative.⁶ In fact, the way Winer contrasted his rational approach with the predominant empiricism of the preceding century seems to anticipate Chomsky's attack on behaviorism. This is reflected already at the beginning of Winer's preface:

When this Grammar first appeared, in 1822, the object proposed was, to check the unbounded arbitrariness with which the language of the New Testament had so long been handled in Commentaries and exegetical prelections, and, so far as the case admitted, to apply the results of the rational philology, as obtained and diffused by Hermann and his school, to the Greek of the New Testament. It was in truth needful that some voice should be raised which might call to account the deep-rooted empiricism of the expositors, and might strive to rescue the New Testament writers from the bondage of a perverted philology, which, while it styled itself sacred, showed not the slightest respect for the sacred authors and their well-considered phraseology.

The fundamental error . . . of this biblical philology, and consequently of the exegesis which was based upon it, really consisted in this, that neither the Hebrew language nor the Greek of the New Testament was regarded as a *living* idiom . . . designed for a medium of human intercourse.⁷

Then in his Introduction Winer explained the object of his study:

The peculiar language of the N.T., like every other language, presents two distinct aspects for scientific investigation . . . the *material* element; . . . the *formal* element. The former is the province of lexicography; the latter of grammar,--which must be carefully distinguished from the laws of style (or rhetoric) of the N.T. . . .

As the language in which the N.T. was written is a variety of Greek, the proper object of a N.T. grammar would be fully accomplished by a systematic grammatical comparison of the N.T. language with the written Greek of the same age and of the same description.

However, no study existed of such comparable material, nor, even more desirable, was there "a grammar of the language used by the Greek-speaking inhabitants of Alexandria, gathered from all parts of the world." So Winer made the necessary adjustment:

the boundaries of N.T. grammar must be extended in two directions. It must first . . . investigate the peculiarities of the later Greek in the N.T., . . . and secondly, it must point out the modifications which were introduced by the influence of the Hebrew-Aramaean on the Greek . . . It is not possible, however, to make a rigorous distinction between these two elements; for in the mind of the N.T. writers the mixture of the (later) Greek with the national (Jewish) has given rise to a *single* syntax, which must be recognized and exhibited in its unity.⁸

Winer then described the method he sought to apply:

The *rational* method of treatment, which seeks for the explanation of all the phenomena of languages, even of their anomalies, in the modes of thought which characterise nations and individual writers, has completely transformed [*hat . . . ganz umgestaltet*: "has accomplished a complete revolution" in Masson and Thayer] the study of Greek. The same method must be applied to the language of the N.T. . . .

It was in Greek philology that the reformation commenced. A pupil of Reitz, Gottfr. Hermann, by his work *De emendanda ratione grammaticae Graecae* (1801), gave the first powerful impulse to the *rational* [*philosophisch* in previous German editions, both here and above] investigation of this noble language. . . . The principles of this method, which entitle it to the name of rational, are the following:

(a) The fundamental meaning of every grammatical form (case, tense, mood), or the idea which underlay this form in the mind of the Greek nation, is exactly seized, and all the various uses of the form are deduced from this primary signification. . . .

(b) When the established laws of the language are violated, either in expressions of general currency, or in the usage of individual writers, the grammarian is at pains to show how the irregularity originated in the mind of the speaker or writer, . . .

The language is thus presented as bearing the direct impress of Greek thought, and appears as a *living* idiom.⁹

Winer gave this last point some considerable emphasis.

He was very clear that Hellenistic Greek was

a language of common life, a popular spoken language, in which the peculiarities of the various dialects . . . were fused together. . . . This spoken Greek . . . is the true basis of the language of the LXX and the Apocrypha, and also of the N.T. language. . . .

The Jews of Egypt and Syria . . . learned Greek in the first instance by intercourse with those

who spoke Greek, not from books; hence we need not wonder that in writing they usually retained the peculiarities of the popular spoken language.¹⁰

The argument for New Testament Greek as a living spoken language received its strongest support with the newly discovered secular papyri at the end of Winer's century. However, even though Deissmann¹¹ claimed that the papyri established the existence of a Hellenistic vernacular language which was used by the New Testament writers, Winer was not confirmed in his insights about the nature of New Testament Greek, because the grammarians who appropriated Deissmann's results were working with the new comparative philology and its historical perspective. So they rejected the rational, anti-empiricist position of Winer and consequently overlooked any enduring contributions he may have made. The rise of comparative philology had rendered rational grammar obsolete.

Comparative philology actually began before the publication of Winer's first grammar in 1822, with the work of Franz Bopp on a comparative study of classical Indo-European languages.¹² This began a century-long emphasis in classical language study on the growth and development of related languages and dialects by comparing their analogous forms. By the end of the 19th century the results of comparative-historical philology began to be applied to the study of HG grammar, in Germany, England and America. Each of the three endeavors

emerged as a major tradition, yielding one of the standard reference works on the subject still in use today: Blass-Debrunner, Moulton-Howard-Turner and Robertson.

The first of these was begun in Germany, in 1896, by Friedrich Blass,¹³ a classical philologist (not a comparative philologist). He was primarily concerned to investigate "the special features" of New Testament Greek, which could not be thoroughly documented in "the general grammar of the Greek language."¹⁴ A working knowledge of Greek grammar was thus presupposed¹⁵ as the framework within which to catalogue the changes in the Greek language between the classical and New Testament eras. These observations on changes have mostly to do with forms and usage, the matters of direct interest to the philologist of that day.¹⁶

After his death the initial work of Blass was carried on by Albert Debrunner, who was not only a classical philologist, but also an Indo-European linguist. He revised and expanded the material through several new editions from 1913 till 1958, after which Robert Funk produced an English translation.¹⁷ Though Debrunner added his own contributions from comparative philology, he reaffirmed the approach of Blass: "the major emphasis in the treatment of NT syntax must fall, where Blass had demonstrated his mastery, namely, on the comparison of NT with classical syntax."¹⁸ This emphasis kept the Blass-De-

brunner grammar clearly in the tradition of classical philology, by treating New Testament Greek rather like a dialect, or one historical period in the history of the Greek language. Within that framework Debrunner also extended the comparisons to include the Septuagint, the newly discovered papyri, and early Christian literature, but he did not want to expand it into "a Hellenistic grammar."

The tradition of Blass and Debrunner has been rigorously preserved in a recent new edition,¹⁹ eighty years after Blass began, which still reflects nothing of the linguistic developments of the 20th century.

The combination of classics and comparative philology brought about interestingly different results in the background of James Hope Moulton, the British scholar who initiated *A Grammar of New Testament Greek* as a three-volume project at the turn of the century. His impetus came from his father, William F. Moulton, who had translated several editions of Winer's *Grammar* and had intended to write a new edition of it himself before he died. When his son undertook the task, he explicitly said on the title page of the first edition, that it was "based on W. F. Moulton's edition of G. B. Winer's *Grammar*." The second edition, that same year, moved the expression of indebtedness to Winer from the title page to the Preface.

Moulton lived to complete only half of the project himself.²⁰ Wilbert F. Howard edited and finished the work on the second volume.²¹ The volume on syntax was delayed by several deaths before Nigel Turner finally "broke the spell by living to complete Volume III" several decades later.²² He recently added another volume on style,²³ which does little more than reorganize the earlier material according to the various New Testament writers. At that time the earlier volumes were again reprinted. So the four-volume grammar covers the first three-quarters of this century, long enough to notice a shift in the linguistic understanding of New Testament Greek.

Moulton's preface set the tone for his approach to this grammar:

The life-history of the Greek language has been investigated with minutest care, not only in the age of its glory, but also throughout the centuries of its supposed senility and decay. Its syntax has been illuminated by the comparative method; and scholars have arisen who have been willing to desert the masterpieces of literature [as did Moulton himself!] and trace the humble development of the Hellenistic vernacular down to its lineal descendant in the vulgar tongue of the present day. . . . The main purpose of these *Prolegomena* has been to provide a sketch of the language of the New Testament as it appears to those who have followed Deissmann into a new field of research. . . . In the second volume I shall try to present as concisely as I can the systematic facts of Hellenistic accidence and syntax, not in the form of an appendix to a grammar of classical Greek, but giving the later language the independent dignity which it deserves.²⁴

In the opening of his first chapter he then talked about his new understanding of New Testament Greek. He himself had earlier called it *Hebraic* Greek, *colloquial* Greek, and *late* Greek, before substituting the label *common* Greek, and then *Hellenistic*.

The disappearance of that word "Hebraic" from its prominent place in our delineation of NT language marks a change in our conceptions of the subject nothing less than revolutionary. This is not a revolution in theory alone. It touches exegesis at innumerable points. It demands large modifications in our very latest grammars ²⁵

Deissmann's work on the papyri had demonstrated to Moulton "that 'Biblical' Greek, except when it is translation Greek, was simply the vernacular of daily life."²⁶

What we can assert with assurance is that the papyri have finally destroyed the figment of a NT Greek which in any material respect differed from that spoken by ordinary people in daily life throughout the Roman world.²⁷

Moulton was able to make this assertion even more emphatically than Winer had earlier, because of his "Deissmannian" vantage point in applying comparative philology to Greek. However, the comparative methodology had no unifying theory about the nature of language. So even at its best, Moulton's understanding could only produce a more complete catalogue and description of forms and usage for HG. Unfortunately, Moulton's project had to be completed by others, at a time when "Deissmannism" was under attack for failing to see the

influential role of Semitisms in HG. Moulton's pupil, Howard, in editing Vol. II, wrote the Appendix on "Semitisms in the New Testament" which Moulton had intended to write. Howard favorably cited the work of Deissmann's critics and claimed that Moulton himself was moving in that direction.²⁸ Already Moulton's legacy was becoming tarnished.

By the time Turner wrote the volume on syntax, some thirty years later, "Deissmannism" had waned considerably, and Turner promoted its overthrow, thereby devaluing Moulton's understanding of the subject matter. One of Turner's concerns was "the relationship of Biblical Greek to classical and Hellenistic."²⁹ The language of the New Testament was for him "Biblical Greek," an entity distinct from "Hellenistic." The implications of that view are clear in his Introduction:

I have tried to expose consistently the almost complete absence of classical standards in nearly every author. . . . It is not that Biblical Greek has no standards at all, but pains must be taken to discover them outside the sphere of classical Greek, even outside secular Greek altogether, although the living Koine must be kept in mind always. . . .

. . . the present work does suggest that Bibl. Greek is a unique language with a unity and character of its own. . . . There is a family likeness among these Biblical works, setting them apart from the papyri and from contemporary literary Greek, although the books from Semitic sources may have these features to an especial degree. . . .

. . . the lapse of half a century was needed to assess the discoveries of Deissmann and Moulton and put them in their right perspective. We now

have to conclude that not only is the subject-matter of the Scriptures unique but so also is the language in which they have come to be written or translated.³⁰

A definite linguistic regression is evidenced here. Turner is so taken in by New Testament peculiarities and Semitisms (the largest section in his index) that he is no longer even certain "whether it was a spoken language."³¹ Later, when he wrote Vol. IV, he was describing the "inner homogeneity of Biblical Greek" as the "layer of basic Jewish Greek" which can be found in all New Testament authors.³²

Thus the grammar which bears Moulton's name ends up by denying his "central position, that the New Testament was written in the normal *κοινή* of the Empire."³³ And thus comparative philology had succeeded in erasing its last significant link to Winer, having long before put aside his rational approach to grammar. The revolution introduced by Winer had been overthrown by another revolution, but not that envisioned by Moulton. He used "revolutionary"³⁴ for the understanding of Hellenistic Greek as a living spoken language. But when the publication announcement said of the Moulton grammar, "a revolution in New Testament study,"³⁵ it referred more to the comparative method being applied to New Testament Greek than it did to Moulton's "revolutionary" understanding of the New Testament Greek language.

In America the results of comparative philology were carefully applied to New Testament Greek grammar by A. T. Robertson.³⁶ He too had begun with the notion of a revised edition of Winer (before Moulton's project was announced), but "so much progress had been made in comparative philology and historical grammar since Winer wrote his great book that it seemed senseless to go on with it."³⁷ Comparative philology had wrought a "linguistic revolution" that for Robertson was integrally linked to historical grammar.³⁸ The historical-comparative method had yielded extensive results on classical Greek³⁹ and now had to be applied to the vernacular Greek of the New Testament, an historical phase of the Greek language made distinct by the work of Deissmann. With such an emphasis on the comparative history of language, which Robertson developed as a scholarly heir of Bopp,⁴⁰ he aimed for a "descriptive historical grammar"⁴¹ that would record the grammatical usage of a particular time (the New Testament era), and compare that to some earlier standard (Attic), and to other particular times and places (LXX, papyri, and literary Koine). Robertson thus produced a massive volume of observations about the various changes the Greek language had undergone, and an extensive catalogue of usages in the New Testament, but historical and comparative grammar lacked the facility to go beyond such a

description of how a language was used. However, Robertson made a virtue of that limitation. The scientific linguist appealed "to the actual facts of the history of language," rather than to logic.⁴² It was clear to Robertson how far linguistics had come:

It is a long step from Winer, three generations ago, to the present time. We shall never go back again to that standpoint. Winer was himself a great emancipator in the grammatical field. But the battles that he fought are now ancient history.⁴³

As Robertson was making that definitive statement, the next revolution in linguistics was already underway. It set the tone for the 20th century.

The new approach came to be called "structuralism." Its origins are traced to Ferdinand de Saussure, the Swiss linguist. From 1906 till 1911 he taught three courses on general linguistics. After his death, his students compiled their class notes into the only preserved account of de Saussure's method.⁴⁴ De Saussure directly attacked comparative philology by emphasizing four major distinctions which contrasted it with his approach. On the one hand, comparative philology dealt with *written* texts, as the user's "*parole*" (actual speech), from a *diachronic* perspective tracing historical developments, with the focus on the *substance* of language's realizations. De Saussure sought rather for linguistics to study the living *spoken* language, in terms of the

user's "*langue*" (the language a speaker knows), from a *synchronic* perspective analyzing the complete language at a given time, with the focus on the *form* of language's structure, as discovered in the relational patterns of the whole language.⁴⁵

Structuralism became the dominant feature of 20th century American linguistics. Especially prominent was Leonard Bloomfield⁴⁶ in the 1930's, whose work became the definitive influence on all later descriptive linguistics. He rejected mentalistic notions of language for a behaviorist view which promoted empirical observation of linguistic units, first phonological, then morphological, finally whole words, and then groups of words. The process used to find these units is called immediate constituent (IC) analysis. Each unit is broken down to its smaller units, until eventually the basic elements are discovered, which can then be appropriately classified. The strengths of this system are best seen in the productive investigation which was made of American Indian languages during the early decades of the 20th century.⁴⁷ By mid-century, the neo-Bloomfieldians began synthesizing their results. The best known among this school was Noam Chomsky's teacher, Zellig Harris, who will be discussed in Chapter Two in connection with a fuller treatment of structural linguistics.

In the 1950's the results of structuralism were applied to the study and teaching of English grammar. Previously structuralism had been most concerned with the smallest linguistic units, how phonemes and morphemes make up words,⁴⁸ and only secondarily with an "immediate constituent" analysis of full sentences. By the early 1950's, however, syntax had become of increasing interest. In the study of English grammar, that concern was most successfully exemplified by Charles C. Fries.⁴⁹ His approach was popularized for the teaching of English by Paul Roberts.⁵⁰ Subsequent work on the teaching of English by Roberts⁵¹ and on the systematic study of English by H. A. Gleason,⁵² kept abreast of the newest developments in linguistics, namely, the initial stages of transformational-generative (TG) grammar.

Structuralism began to be applied to the study of New Testament Greek without the usual benefit of an earlier thorough application to classical Greek. It was also the more limited pre-TG structuralism. The most serious such effort is by Robert Funk.⁵³ Realizing "that a revolution had taken place in the study and learning of language,"⁵⁴ he saw an opportunity finally to overcome the ineffectiveness of traditional grammar in teaching Greek. He uses the descriptive linguistic framework as presented in Gleason, reinforced by the structuralism of Roberts. Funk explains his method thus;

In accordance with the aims of descriptive analysis, it was determined to proceed empirically insofar as possible [i.e., with the analysis of a selected corpus of texts].⁵⁵

A descriptive grammar must achieve two things: 1) it must develop a classification of words and other elements; 2) it must state the grammatical relations that obtain among these elements. . . .

The classification of words and other elements must be based on structural, i.e., grammatical, features. . . . If classification is derived from structure, there are two sets of criteria which may be used, and these do not always coincide: 1) One set of criteria may be derived from the words themselves, i.e., from morphological criteria; 2) Another set may be derived from the ways a word may be used in a sentence. . . .

. . . an extensive statement of the relations between these features proves to be a very complicated matter. It is made no less complicated by the fact that various word classes require subdivision into smaller classes, and many words belong to more than one class.⁵⁶

Here we have a typical structuralist design, which Funk finds very fitting for a highly inflected language such as Greek. He devotes his major effort to Greek morphology, labeling and classifying all the structural signals (prefixes and suffixes) and function words (negatives, interrogatives, subordinators). This process is sometimes called taxonomy, or even "verbal botany."⁵⁷

Funk's presentation on syntax is likewise an attempt to list all the common sentence patterns, again a notion taken from Gleason, who uses Roberts' schema. Gleason, however, went on to adopt the results of early generative and then

transformational grammars to show, e.g., the integral relationship between an active sentence and its passive counterpart; a question, and the statement corresponding to it. In contrast, Funk only uses the label "transformation" in various places for the passive, but his failure to comprehend its significance is reflected in the fact that the passive sentences are dispersed under the various appropriate categories of their sentence structure, and other corresponding types of sentences are not dealt with at all. In the final analysis, Funk's effort is an excellent witness both to the shortcomings of structuralism: elaborate classification of items without an adequate description of syntax, and to its major contribution: morphological analysis of word forms and types. The syntactical inadequacy of structuralism was addressed head-on by the new revolution in linguistics. Chomsky's transformational-generative theory had even undergone its most significant revision before Funk's grammar was written. Once again a new Hellenistic Greek grammar was making its appearance just when its linguistic basis was losing currency.

This brief survey has shown that the study of Hellenistic Greek grammar has consistently been based on a linguistic theory that had already been supplanted by the next major development in linguistics. We are again in that same situation.

A new revolution in linguistics has completely altered the way language is conceptualized, studied and taught, both theoretically and pedagogically (for everything from ancient Egyptian to elementary-school English). After a closer look at this theory we will apply it to one aspect of Hellenistic Greek.

CHAPTER TWO

CONTEMPORARY LINGUISTIC THEORY

The latest, and perhaps most pervasive, revolution in linguistics has been the one sparked by Noam Chomsky,¹ dating from the publication in 1957 of *Syntactic Structures*.² Here was not just a new or improved methodology, but a complete redefinition of the agenda of linguistics.³ In order to grasp the full dimensions of this revolution, we need first to summarize the forefront of pre-Chomskyan linguistics.

Chomsky was a graduate student of Zellig Harris at the University of Pennsylvania.⁴ Harris represents the culmination of neo-Bloomfieldian descriptive linguistics. In fact, what follows is characteristic of the work done by all structural linguists from Bloomfield on, often called simply "structuralism." Harris' *Methods in Structural Linguistics* is a program of "research methods . . . arranged in the form of the successive procedures of analysis imposed by the working linguist upon his data,"⁵ which is a recorded corpus of utterances. The process begins by identifying the smallest distinct units of language, the phoneme (similar segments of sound), and then investigating the "distribution or arrangement" of individual

segments in relation to others. Classifications are set up next based on the patterns of which segments regularly occur in the same context with others.

The entire process is then repeated for morphemes, each morpheme being a group of phonemes that occurs in a fixed combination or in a restricted distribution ("environment") of an utterance. Thus one-syllable words are morphemes, as are some multi-syllable words like "ceiling" (because "ceil" does not occur in any other environment), but "sailing" is two morphemes ("sail" and "-ing" occur, respectively, as a fixed form, and in a similar restricted environment, i.e., a verbal suffix). By segmenting utterances into morphemes, the morphemes can be classified by substitutability (e.g., "small" and "large" are the same class because they are both acceptable in the sequence "The ____ ball"). The sequences of morphemes become the constructions which are grouped into "syntactic form-classes which indicate what morpheme sequences have identical syntactic function, i.e., occur in identical environments in the utterance." So syntax is really a subdivision of morphology, in that the linguist first identifies the syntactic function of morphemes and then "builds up from them to even larger morpheme sequences having identical syntactic status."⁶

The impression is left at this stage of an efficiently organized set of procedures which begins with the smallest

units and methodically works its way from the ground up, constructing ever more interrelated sequences until it reaches the complete utterance, and all this with the linguist functioning very mechanically as a "true scientist." However, it is at the top level, the utterance, that the analysis requires more than mere labeling and classifying of forms. An excerpt from the problem as presented by Harris:

We take, for example, the utterance *She made him a good husband because she made him a good wife.* We know that there is a difference in meaning between the two occurrences of *made*; and since we know this without any outside information beyond hearing the sentence, it follows that indication of the *difference in meaning* [emphasis added] and in construction can be derived from the structure of the utterance. The difference is not in the morpheme *made*, since the two occurrences are identical in form, and must therefore be in the class membership of *made* in the two cases. But the class membership must be recognizable from the different class sequences and their substitution in the two utterances. (The second can be paraphrased, *She made a good wife for him*; the first cannot use such a paraphrase.)⁷

The linguist has to recognize "difference in meaning" between two identical sequences in order to be able to classify them separately. No amount of precise sub-categorizing at the level of individual units is going to remove or reduce the problem. The linguist is not an indifferent operator of a precision instrument after all, Harris (like all users of language) was informed by his own intuitive knowledge of the language that these two occurrences of *made* had to be classified differently.

When this process has been successfully completed for a large enough corpus, the language will be thoroughly labeled and classified and then one can take any new utterance, reverse the process and begin at the top by determining the immediate constituents of the utterance, and the immediate constituents of each one of those constituents, and so on down the line until arriving at the individual morphemes. Using Harris' notations (whose sub-divisions are of no interest to us here), we can summarize the reverse process for one of his utterances:⁸

utterance = N⁴ (noun phrase) and V⁴ (verb phrase)
 = T and N³; V² and Vv
 = T, N², and -s; Vv, V¹ and P
 = T, A and N², -s; Vv, V¹ and P
 = T, D, A and N², -s; Vv, V¹ and P.

Doing this to a variety of different types of utterances allows for generalizing about the relations of various position clauses, i.e., larger groups of morpheme sequences which "substitute freely for each other in those positions in the utterance within which that class occurs."⁹ Harris then concludes with a brief discussion of morphological structure, i.e., "sentence types," based on such generalizations. For English they are variations of N V or N V N.

Taking from Harris' survey, we may summarize the methods of structural linguistics. "The basic operations are those of segmentation and classification," distinctions derived from

comparison. "As a result of these operations, we not only obtain initial elements, but are also able to define new sets of elements as classes or combinations of old ones." This is achieved by applying "various techniques of discovery . . . used over and over again . . . to find regularities and parallel or intersecting patterns." Finally, larger and larger classes are established through "the generalization of operations." By focussing on "considerations of discovery" we avoid "any classification of forms on the basis of meaning" (although we noted a problem with this above). Assuming our corpus was adequately large (a "statistical problem"), we take the results to be indicative of the structure of the whole language. The results may even relate to other areas, such as language learning and other sciences.¹⁰ Below we will see how completely Chomsky upset this procedural order.¹¹

There are some later developments by Harris which also play a role in Chomsky's work. Harris pursued his sentence-pattern summary, with which he concluded *Methods*, by analyzing a connected discourse for the structure of the text, i.e., how different sentence types are related to each other.¹² Again the focus is on method -- procedures and techniques which isolate the distribution of various patterns and their correlation (again using environments and classes). The method is still claimed to be "formal, depending only on the occur-

rence of morphemes as distinguishable elements," therefore not based on the meaning of sentences. The analysis of the pattern of interrelationships between sentences within a given text can provide information about a language "that goes beyond descriptive linguistics"¹³ (thereby admitting that descriptive linguistics is inadequate to fully describe the structure of a language). Harris is able to derive twelve "grammatical transformations," using the following definition:

Let us say that any sentence $X_1 A X_2$ can be "transformed" into $A \text{ is } X_1 : A X_2$.¹⁴

Harris' example was similar to: *The defeated team left early* becomes *The team is defeated; the team left early*. His apparent explanation is that *defeated* is in the same relationship to *team* in both sentences, a relationship he calls "equivalence class." The most common example of a transformation is the passive:

$N_1 V N_2$ is equivalent to $N_2 \text{ is } V\text{-en by } N_1$ because for any sentence like *Casals plays the cello* we can find a sentence *The cello is played by Casals*.¹⁵

Harris emphasizes that meaning cannot be a factor; all distinctions are based on morpheme patterns. He claims to keep *You wrote Paul* and *Paul wrote you* from being a transformation because of morphemic order,¹⁶ but the passive involves the same change of order, plus the insertion of several new morphemes.

Harris returned to this problem when he later expanded his analysis on transformations.¹⁷ He gave increased attention both to the methods for "discovering transformations" and to a much more thorough description of various transformations and of how to identify the equivalent constructions which qualify as transformations. His new solution to the problem noted above is to make room for meaning:

Transforms seem to hold invariant what might be interpreted as the information content. This semantic relation is not merely because the same morphemes are involved. For example, *The man bit the dog . . .* contains the same morphemes as *The dog bit the man . . .*, but it describes quite a different situation; and [the first] is not a transform of [the second].¹⁸

Though in his conclusions he still tries to keep meaning outside of linguistic structure and of transformational theory, he does label it as an area in need of investigation.

There is one further matter raised by Harris to note here which will concern us later. His emphasis on co-occurrence, i.e., on finding equivalent constructions based on similar syntactic environment, leads him to treat nominals as derived from cognate verbs. Hence, "*flight* can be identified as *fly* plus a *vn* suffix and also as *flee* plus a *vn* suffix."¹⁹ This approach to cognates was one of the many dimensions of Harris' work which Chomsky initially left unquestioned and only later investigated and rejected. They will be discussed here in due course.

In summary, structuralism began with a corpus of utterances recorded from native speakers. A system of discovery procedures telling the linguist how to approach his data was then applied to this corpus, with the goal being a precise classification of the elements of the utterances, both individually and in their interrelationships, focussing first on phonology and then on morphology.

We can now turn to view the nature of Chomsky's revolution. As indicated in the title *Syntactic Structures*, Chomsky begins with syntax, a concern reached in structuralism only after it had thoroughly researched phonology and morphology.²⁰ It was necessary to reverse the point at which to begin, because Chomsky did nothing less than challenge the objective of linguistic theory. He states his agenda clearly at the opening of *Structures*:

Syntax is the study of the principles and processes by which sentences are constructed in particular languages. Syntactic investigation of a given language has as its goal the construction of a grammar that can be viewed as a device of some sort for producing the sentences of the language under analysis. More generally, linguists must be concerned with the problem of determining the fundamental underlying properties of successful grammars. The ultimate outcome of these investigations should be a theory of linguistic structure in which the descriptive devices utilized in particular grammars are presented and studied abstractly, with no specific reference to particular languages. One function of this theory is to provide a general method for selecting a grammar for each language, given a corpus of sentences of this language.²¹

The first contrast with structuralism to note is the goal: "the construction of a grammar . . . for producing the sentences of the language" as opposed to labeling and classifying items in an utterance. Such a grammar will specify the rules needed to produce or "generate" all and only the grammatical sequences and will assign to each "a certain structural description that specifies the linguistic elements of which it is constituted and their structural relations (or, in the case of ambiguity, several such structural descriptions)," ²² while at the same time generating none of the ungrammatical sequences. The grammatical sequences are defined as those which are "acceptable to a native speaker." ²³

From this we see the second contrast, the scope. *All* the sentences that the grammar must generate will be infinite in number. Therefore no one chosen corpus is adequate. The "corpus of sentences" referred to above includes the complete corpus that the grammar will generate, which has already been defined to be what is acceptable to the native speaker. This amounts to his intuitive or "implicit knowledge" of the language, or more commonly called *competence*, in contrast to any select corpus as the *performance* of a native speaker, i.e., how he actually uses his knowledge.

The third contrast is that of the methods developed. Structuralism's methods were the *discovery* procedures used to segment and classify individual elements, or in general

to construct a grammar. However, no scientific discipline is concerned with how its theories are discovered, but only with their adequacy. Thus for Chomsky, the only legitimate methodological requirement of a linguistic theory (or any scientific theory) is an *evaluation* procedure, which he calls a "simplicity measure."²⁴ When applied to linguistics this involves "the problem of justification of grammars" -- how to choose one grammar over others for the same language.²⁵

The evaluation procedure which justifies a grammar belongs to the highest of the three levels of adequacy which are available to describe the success of a grammatical description for any particular linguistic theory. Chomsky succinctly summarizes his argument of this matter thus:

The lowest level of success is achieved if the grammar presents the observed primary data correctly. A second and higher level of success is achieved when the grammar gives a correct account of the linguistic intuition of the native speaker, and specifies the observed data (in particular) in terms of significant generalizations that express underlying regularities in the language. A third and still higher level of success is achieved when the associated linguistic theory provides a general basis for selecting a grammar that achieves the second level of success over other grammars consistent with the relevant observed data that do not achieve this level of success. In this case, we can say that the linguistic theory in question suggests an explanation for the linguistic intuition of the native speaker. . . .

For later reference, let us refer to these roughly delimited levels of success as the levels of *observational adequacy*, *descriptive adequacy*, and *explanatory adequacy*, respectively. . . . A grammar that aims for

observational adequacy is concerned merely to give an account of the primary data (e.g., the corpus). . . ; a grammar that aims for descriptive adequacy is concerned to give a correct account of the linguistic intuition of the native speaker . . . ; and a linguistic theory that aims for explanatory adequacy is concerned with the internal structure of [that linguistic intuition]; that is, it aims to provide a principled basis, independent of any particular language, for the selection of the descriptively adequate grammar of each language. . . .

Modern linguistics has been largely concerned with observational adequacy. In particular, this is true of post-Bloomfieldian American linguistics. . . .

Traditional grammar, on the other hand, was explicitly concerned with the level of descriptive adequacy. . . .

It is clear that the question of explanatory adequacy can be seriously raised only when we are presented with an explicit theory of generative grammar that specifies the form of grammars and suggests a mechanism for selecting among them (i.e., an evaluation procedure for grammars of a specified form).²⁶

Observational adequacy is certainly too meager an achievement to strive for. The least we expect from a grammar is descriptive adequacy. The traditional, i.e., rational and generalizing, grammars were going in the right direction, but depended too heavily on the implicit knowledge of the reader. That is overcome when we make explicit all the rules which are necessary to produce, or "generate", all the acceptable sentences of a language. Finally, we can even specify the nature of these rules. This third level is part of general linguistic theory. The theory prescribes the characteristics of universal generalizations about natural languages, labeled "linguistic uni-

versals." An evaluation procedure, or "simplicity measure," is a hypothesis about these "universal properties of language."²⁷

Linguistic universals comprise one of several areas of theoretical linguistics which have not yet been investigated in detail. Since they fall beyond the scope of our present study, their description must be brief.²⁸ They are usually classified as *substantive* and *formal*. Substantive universals are those items that all natural languages have in common, possibly a fixed number of phonetic features, or limited word classes (noun, verb, adjective, etc.). Formal universals concern the rules which the grammar contains, e.g., that a grammar must have transformational rules, that rules must be formulated according to specified patterns, and that a grammar must indicate the order in which certain rules apply. An evaluation procedure will then choose that grammar which utilizes such universals to achieve the highest degree of descriptive adequacy.

A fundamental reason Chomsky so stressed this dimension of linguistic theory was not because the resulting grammar would be theoretically complete, or even aesthetically pleasing, but because it provides a basis for a theory of mind.²⁹ For he asserts that a child has "tacit knowledge of these universals."³⁰ They are the major, if not the entire, part of

the innate linguistic structure which characterizes the human mind. Thus a young child quickly develops full creative use of its native tongue--creative in the precise sense of producing and comprehending sentences never before generated in that language. The innate schema of universals and the grammatical rules for any particular natural language together form the grammar for that language and can be thought of as a "language acquisition device," a model for language learning.³¹ The notion of linguistic models has played an important role in contemporary linguistic discussion. Again we can only consider the matter briefly.

We began our discussion of Chomsky with his description of a grammar as "a device of some sort for producing the sentences of the language under analysis." This device can also be viewed as the "language acquisition device" which is presented as the explanation of how a child acquires its native language. The notion of a device for producing sentences, a generating device, is used in the sense of "an *abstract* description of how the device functions"³² not the actual *hardware* which would constitute a physically constructed implementation of it.

Chomsky formalized the notion of generative device into a discussion of linguistic models,³³ as an outgrowth of his insistence that linguistic theory must construct "general, ex-

plicit, and formal grammars."³⁴ He then suggested what the formalized models would look like for the grammars of the alternative linguistic theories. The options are ordered according to increasing complexity of computer theory,³⁵ reflecting the fact that this work was done during the late 1950's and early 1960's when the federal government was funding research into machine translation,³⁶ and so the description of the linguistic models is influenced by digital computer theory.

A linguistic model, like the grammar that it represents, must use a finite set of rules ("operations") to produce an infinite set of sentences ("output"). The simplest device meeting that criterion is a finite-state grammar (mathematically, a "Markov process"). Such a device has a finite number of "states," each of which contains a set of instructions to be performed. A very limited grammar might begin--state #1: choose (optionally or obligatorily) one of the following words and then move to state #2. The first state of this grammar would include the determiners (articles); the second state, adjectives; the third, nouns; the fourth, verbs; etc. A finite number of states could produce an infinite number of sentences only by allowing for recursive operations, that is, the operations at any given state can be repeated (e.g., more than one adjective can be chosen at state #2). Since each

state affects the choice that can be made at the next state (matters of government and concord), this model represents the way some linguists conceived of the process of producing sentences in a word-ordered language like English.³⁷

Chomsky has argued, however, that English is not a finite-state language,³⁸ because a finite-state grammar will not generate *all* and *only* the grammatical sentences of English. The principle inadequacy of a finite-state grammar, is that it cannot account for self-embedding:

Self-embedding is the fundamental property that takes a system outside of the generative capacity of a finite device, and self-embedding will ultimately result from nesting of dependencies.³⁹

Such elementary formal properties of natural languages as recursive nesting of dependencies make it impossible for them to be generated by finite [-state devices].⁴⁰

Several important concepts are introduced here which need explanation. A "nested dependency" is, in traditional terms, a dependent clause located, or "nested," within an independent clause. Thus in the sentence

(1) That it is raining is obvious,

"that it is raining" is nested in the sentence "(it) is obvious." Because it is located at the beginning of the sentence, this construction is called "left-linear" nesting. English can also produce this same sentence (to give only a simplistic explanation) by "right-linear" nesting:

(2) It is obvious that it is raining.

Nesting constructions such as these are called "embeds."

Self-embedding is a process whereby a dependency is nested *within* a sentence (neither left-linear nor right-linear), such as

(3) The man who is speaking is leaving,

where "who (i.e., the man) is speaking" is self-embedded in "the man is leaving." Recursive nesting is embedding within another nested dependency, as in

(4) The man who said that it is raining is leaving

(5) The men who said that it is obvious that it is raining are leaving.

Both of these are examples of recursive self-embedding (recursive right-embedding occurs in "I know that you know that I know that . . .). A finite-state grammar cannot generate recursive self-embedding because its individual states are linked sequentially, and in self-embedding the related units are separated arbitrarily, i.e., in (4) and (5) "the man/men" is related to "is/are leaving," in that both parts must be either singular or plural, regardless of the nature of the embed which is nested between them.

To keep the two states of the noun and the verb in sequence, the embeds would have to be generated by a "grammatical detour," optionally chosen between two of the states that

generate the independent clause. Such a detour would have to contain a complete set of states and each embed would involve its own detour and another set of states. This would mean repeating all the same states that generate the independent clause as many times as there are embeds. Since there can be no theoretical limit to the amount of self-embedding, the detours within detours would continue *ad infinitum*, each containing a complete set of states, which then become infinite in number. Thus the requirement would be nullified that a grammar uses *finite* means to generate an infinite number of sentences,⁴¹ and we would no longer have a *finite-state* grammar.

The simplest model that will generate self-embedding is a phrase-structure (PS) model. This is in effect a formalization of immediate constituent (IC) grammar, in that it makes explicit the sort of grammar presupposed by IC analysis.⁴² PS grammar contains "rewrite rules," each of the type $x \rightarrow y$, interpreted as the instruction, "rewrite x as y , where x is a single symbol and y is one or more symbols." An elementary sample of English grammar can be defined by the following rules.⁴³

- (6) (a) $S \rightarrow NP + VP$
- (b) $NP \rightarrow T + N$
- (c) $VP \rightarrow V + NP$
- (d) $T \rightarrow \text{the}$
- (e) $N \rightarrow \text{boy, girl}$
- (f) $V \rightarrow \text{likes}$

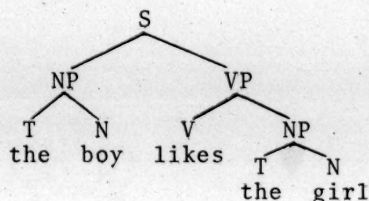
From these rules we can derive the following "terminal" strings, i.e., strings generated from the application of all the PS rules.

(7) The + boy + likes + the + girl

(8) The + girl + likes + the + boy

The application of these rules also assigns a structure to each string--such as (9) for (7).⁴⁴

(9)



This diagram is called the "phrase marker" for this string, also popularly known as a "tree diagram."

An actual PS grammar for English would have to be much more complicated; e.g., it would need to account for concord of number between nouns and verbs in every sentence, and for the many other types of sentences in English (question, command, condition, etc.). Theoretically, it might be possible to construct a PS grammar of English that would generate all and only the sentences of English, i.e., a grammar that would be observationally adequate for English, which a finite-state grammar is not.

However, we have already established a higher criterion for any grammar, viz., it must be descriptively adequate. Zellig

Harris was already aware that so-called "descriptive linguistics" was inadequate to describe the relationships of sentences.⁴⁵ Chomsky presented a more systematic critique.⁴⁶ His discussion can be summarized under two types of common phenomena in English that are not accounted for by a PS grammar: the interrelationship of sentences and ambiguous sentences. Regarding the first, the native speaker of English intuitively discerns an inherent connection between (10a) and (10b) and among the sentences grouped within (11).

- (10) (a) The children ate the candy
- (b) The candy was eaten by the children
- (11) (a) John lives here
- (b) Who lives here?
- (c) Where does John live?
- (d) Does John live here?

In (10) the active (a) and passive (b) sentences would have very different rewrite rules in a strictly PS grammar, even though we intuitively consider them to "have the same meaning." In (11) the three questions (b-d) are all recognized to be related to the declarative statement (a), yet each would need different PS rules.

Conversely, there are sentences that appear to use the same PS rules although we intuitively regard them as having significant structural differences. The most frequently discussed such pair is

(12) John is easy to please

(13) John is eager to please.

In (12) John is the logical object of *please*, whereas in (13) John is the logical subject of *please*. Thus we can have

(14) (a) It is easy (for someone) to please John

(b) To please John is easy.

but not

(15) (a) *It is eager (for someone) to please John

(b) *To please John is eager.⁴⁷

A descriptively adequate grammar must account for the fact that (12) and (13) are only superficially similar, as revealed in the discrepancy between (14) and (15).

Ambiguous sentences offer another test case. A much-used example is

(16) Flying planes can be dangerous.

Generating (16) entirely by PS rules fails to note that the ambiguity of this sentence can be seen in its relationship to two divergent sentences:

(17) Flying planes is dangerous

(18) Flying planes are dangerous.

Descriptive adequacy must reveal the structural differences between (17) and (18) by further relating (17) to

(19) (For someone) to fly planes is dangerous
and relating (18) to

(20) Planes that fly are dangerous.

A linguistic theory is needed that can indicate how these two pairs of sentences are related.

To describe adequately the important PS patterns noted in (10) - (20) a grammar must employ, in addition to PS rules, another type of grammatical rule, the transformation. Such a grammar is the third model Chomsky discusses, and the one he devotes his attention to. The essential character of a transformation rule was presented above as formulated by Zellig Harris. Chomsky developed it considerably further. First he contrasted the transformation (T rule) to the PS rewrite rule. While the latter always begins with a single symbol, a T rule, expressed as $P \Rightarrow Q$, begins with an entire string (P) and converts it into another string (Q)⁴⁸ by rearrangement, insertion or deletion.⁴⁹ From the view of the tree diagram, a T rule maps one entire phrase-marker "into a new *derived Phrase-marker*."⁵⁰ Chomsky also subcategorized T rules because they can, in addition, combine two strings into a third string. Zellig Harris labeled them all simply "grammatical transformations."⁵¹ Chomsky distinguished between the two types by calling the first (converting one string into another) a singular transformation, and the second (converting two strings into a third) a generalized transformation.⁵² Furthermore, Chomsky extended the use of singular transformation to cover certain obligatory operations. Of most importance are the affixing of tense and number

features to verbs and nouns and the assigning of proper word order in English. These T rules are obligatory in that they must be applied to a terminal string before it becomes an acceptable sentence. Such sentences are the kernel sentences of a language. When optional T rules are applied additionally, the sentence is a *derived* sentence.⁵³

It can be shown that sentences for which PS rules are inadequate, e.g., (10b), (11b-d), (16), (17) and (18), are in fact derived sentences, each the result of an optional T rule, some singulary, such as (10b) from (10a) by a passive transformation, (11b-d) from (11a), each by a different question transformation, and the rest generalized transformations. Consider again

(16) Flying planes can be dangerous

(17) Flying planes is dangerous

(18) Flying planes are dangerous.

The last one can best be viewed as the result of a nominalizing transformation involving two strings:

(21) (a) Planes fly

(b) Planes are dangerous.

To (21a) is applied an *ing* nominalization, which then replaces *planes* in (21b). (17) is likewise derived from two strings:

*(22) (a) They fly planes

(b) It is dangerous.

The ambiguity of (16) is described as the result of two alternative transformations, the nominalization of either (21a) or (22a) embedded into

(23) Planes can be dangerous.⁵⁴

These examples demonstrate that a combination of both phrase-structure generations and transformations are necessary to account for the important structural features of sentences. We earlier called this criterion of descriptive adequacy, the level of success we are striving for in a grammar. Our subsequent discussion here will thus presuppose a transformational-generative (TG) model for grammar.

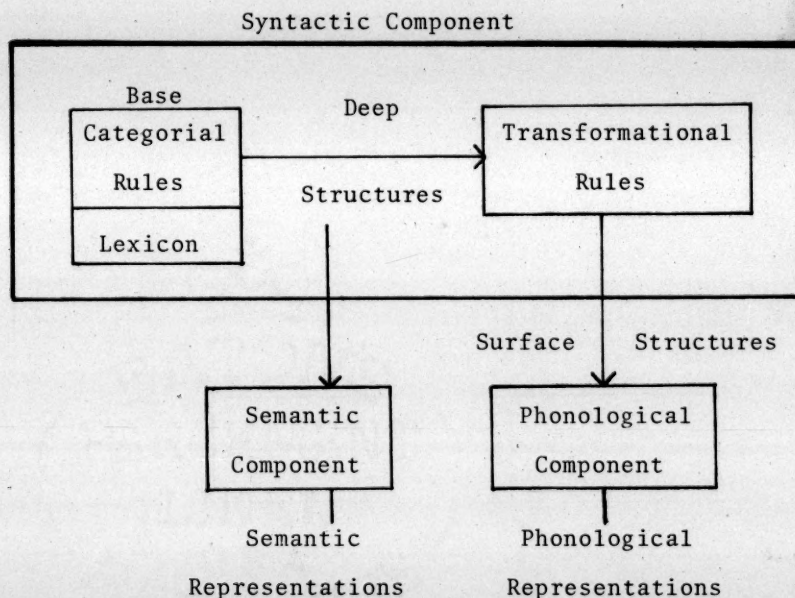
The view of TG grammar just presented reflects the early work of Chomsky in *Structures*. The response to this approach, mostly by his own students, raised a number of issues which led Chomsky to revise various dimensions of his theory. What is now called the "standard theory" is presented in *Aspects*.⁵⁵ It introduces several significant changes which mainly revolve around how the grammar is organized and how semantics fits into the grammar.

The first change is that the PS rules are limited so that they no longer contain any introduction of vocabulary, i.e., no more rules such as $N \rightarrow \{\text{boy, girl, . . .}\}$. Rather, the terminal strings which are generated, such as $N + V + N$, have each item marked for various features. E.g., N may be marked

[+Animate] [+Human] [-Adult]. The language has a lexicon organized in a similar way, so that each entry is marked with its appropriate features. Thus "boy" would be marked [+Animate] [+Human] [+Male] [-Adult], and would be a proper lexical substitute for the terminal item N, as marked above. The lexicon would likewise mark each verb for the possible features which could be given to it, e.g., [+Transitive]/__NP, i.e., such a verb could be used transitively, only in the context where it preceded a noun phrase. This part of the theory has not yet been worked out in any detail.⁵⁶ The PS rules, or "categorical rules," together with the lexicon, comprise the "base" of the "syntactic component" of the grammar. The output of the base is a set of "basic strings." The phrase marker given to each basic string is called the "deep structure" of that string. It is this "deep structure" that is interpreted by the "semantic component" which renders the meaning of the string. Since so little is known about how the mind handles and organizes semantics, Chomsky did not spell out the nature of the semantic component; his main concern was with the syntactic component.

The base, as just described, is only one part of the syntactic component. The other part is the set of transformational rules, which are responsible for changing the highly abstract deep structure of the basic string into a surface structure, which more closely resembles a "sentence" as it is commonly

understood. (We will shortly exemplify this.) In addition to the syntactic and semantic components, a grammar has a phonological component, which renders the surface structure into an actual utterance. Structuralism had previously done much work with phonology, which Chomsky merely assumed in his grammatical discussion.⁵⁷ The relationship of these components has been diagrammed in various ways,⁵⁸ of which we offer a modified version:



The following is how Chomsky has summarized "the organization of a generative grammar":

A generative grammar must be a system of rules that can iterate to generate an indefinitely large number of structures. This system of rules can be analyzed into three major components of a generative grammar: The syntactic, phonological, and semantic components.

The syntactic component specifies an infinite set of abstract formal objects, each of which incorporates all information relevant to a single interpretation of a particular sentence. . . .

The phonological component of a grammar determines the phonetic form of a sentence generated by the syntactic rules. That is, it relates a structure generated by the syntactic component to a phonetically represented signal. The semantic component determines the semantic interpretation of a sentence. Thus, it relates a structure generated by the syntactic component to a certain semantic representation. Both . . . components are therefore purely interpretive. . . . Consequently, the syntactic component of a grammar must specify, for each sentence, a *deep structure* that determines its semantic interpretation and a *surface structure* that determines its phonetic interpretation. The first of these is interpreted by the semantic component; the second, by the phonological component.

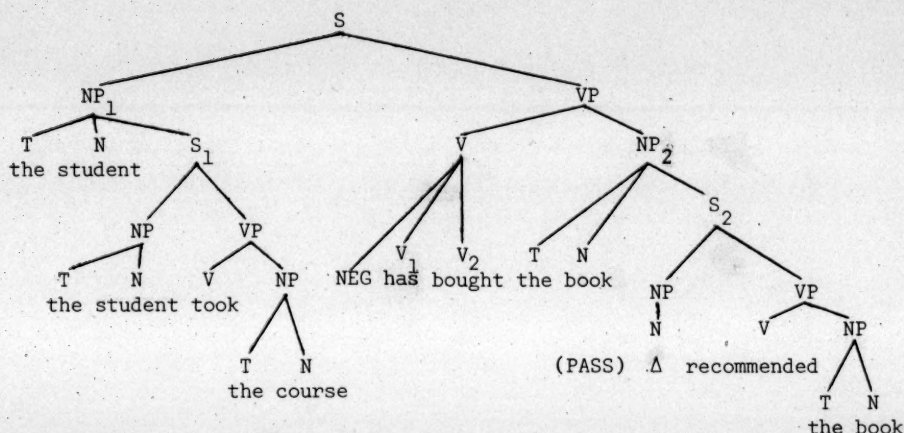
The *base* of the syntactic component is a system of rules that generate a highly restricted (perhaps finite) set of *basic strings*, each with an associated structural description called a *base Phrase-marker*. These base Phrase-markers are the elementary units of which deep structures are constituted. . . . Underlying each sentence of the language there is a sequence of base Phrase-markers, each generated by the base of the syntactic component. I shall refer to this sequence as the *basis* of the sentence that it underlines.

In addition to its base, the syntactic component of a generative grammar contains a *transformational* subcomponent. This is concerned with generating a sentence, with its surface structure, from its basis.⁵⁹

In order for the deep structure to contain all the necessary semantic information, Chomsky had to change his theory of how the transformational rules work. Since the deep structure

must contain all the semantic information, the transformations must be "marked" in the deep structure strings, and thus they become obligatory. That includes both the singular transformations, such as negative, question, imperative,⁶⁰ as well as those that were the generalized transformations. These latter had interrelated two (or more) basic strings. Now such relationships must be shown in the deep structure. Therefore, there is another change in PS rules which allows the initial sentence symbol, S, to appear on the *right* side of a rewrite rule. Thus the expression "the student who took the course" is generated from the rule $NP \rightarrow T + N + S'$ (S "prime" used to indicate a constituent string embedded into the original S, or matrix string). Another feature of *Aspects* is the introduction of an empty terminal symbol, Δ , used when an element in the terminal string has no lexical item inserted into it.

The various matters discussed above can best be further clarified by a base phrase-marker (= the deep structure), variously called Base Marker or Deep Marker, of a carefully restricted English sentence (without lexical feature markings or concord or tense transforms).



The minimal PS rules for this sentence are:

- (24) (a) $S \rightarrow NP + VP$
 (b) $NP \rightarrow (T) N (S')$
 (c) $VP \rightarrow V + NP$
 (d) $V \rightarrow V_1 + V_2 (+ NEG)$

Traditional functional categories can be described in terms of the grammatical structures of the phrase-marker. The "subject of" S is the labeled node NP directly dominated by S, here designated NP_1 ; the "direct object of" S is the labeled node NP directly dominated by VP, here designated as NP_2 . Each of these two NPs has an embedded S, here labeled S_1 and S_2 , which are constituent strings that are embedded into matrix string S. The relative transformation rule (T rel) transforms S_1 into the string "who took the course," by replacing the identical

NP in S_1 with the relative, so NP identity becomes a condition for T rel. This may be formalized as a context-sensitive rule:

$$(25) \text{ T rel: } NP + VP \implies \\ \text{rel} + VP / NP_i.$$

Spelled out, we have the relative transformation which operates on a basic string NP + VP and transforms it into the string rel + VP, only in the context of NP identity (with the NP into which S' is embedded).

Before applying T rel to S_2 , we note the instruction (Pass), to apply T pass to S_2 first. This requirement of order of T rules is usually called the cyclic principle, wherein all T rules must first be applied to a string for which there are markings in that string before any embed rules are used. The T pass rule was given earlier. Applied here the result is "the book was recommended by Δ ." "By Δ " will be deleted by a general rule in the grammar which deletes all occurrences of Δ (null or empty terminal elements). So now we have a string that would be equivalent to "the student who took the course $_{NEG}$ has bought the book which was recommended." The marking NEG requires a T neg on the v, vastly over-simplified as

$$(26) \text{ T neg-v: } NEG V_1 + V_2 \implies \\ V_1 + not + V_2.$$

(V_1 is usually labeled Aux [for "auxiliary"].) Finally, after all the phonological rules have been applied to the string, we

have "the student who took the course has not bought the book which was recommended." Many details have had to be passed over as we sought to present only the essence of TG grammar.⁶¹

The decade following *Aspects* has seen a voluminous body of literature debating many of the facets of Chomsky's "standard theory" of TG grammar. Only the two most general and significant issues can be dealt with here. The first is concerned with the problem of delineating the semantic component. Rather than assigning to the semantic component an interpretive role, as Chomsky does, some of his students have argued that the semantic component really is the initial generative component and that syntax cannot formally be distinguished from semantics. Or if it is, it comes *after* semantics in the organization of the grammar. The position that suggests that semantics belongs in the base has been labeled "generative semantics." If semantics generates the basic strings, there is no longer any need to distinguish deep and surface structure, and grammar becomes a linear sequence of components and cyclic operations, more like the original model of *Structures*, though with different components. There are many nuanced sub-categories in the general area of generative semantics, all of which is beyond the scope of our topic. Only Chomsky's outlined reply can concern us here.

In "Deep Structure, Surface Structure and Semantic Interpretation"⁶² Chomsky responds to the various semantic arguments

which were offered against *Aspects*. He considers them attempts to focus "on the notion of deep structure and the relation of semantic representation to syntactic structure,"⁶³ and he offers evidence for the inadequacy of each response,⁶⁴ suggesting in fact that some are "in a sense, mere notational variants."⁶⁵ He is more concerned with the "cases in which semantic interpretation seems to relate more directly to surface structure than to deep structure,"⁶⁶ especially in English where word order or intonational emphasis can change the focus and other related matters. The question transformation can alter the meaning of a word:

(27) (a) I shall go downtown

(b) Shall I go downtown?

as can a negative transformation:

(28) (a) John will go downtown

(b) John won't go downtown.

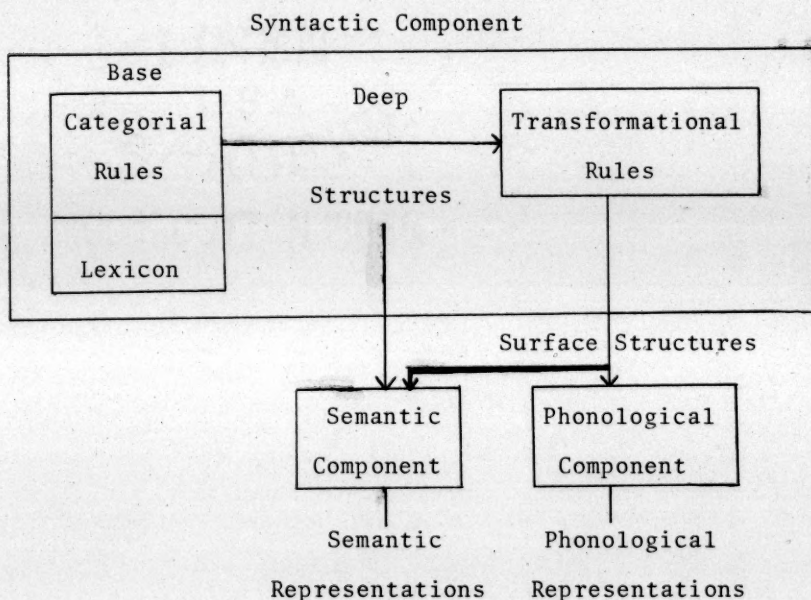
In both cases "shall" and "will" appear to change meaning.⁶⁷

After numerous examples, Chomsky concludes

It seems that such matters as focus and presupposition, topic and comment, reference, scope of logical elements, and perhaps other phenomena, are determined in part at least by properties of structures . . . other than deep structures, in particular by properties of surface structure.⁶⁸

This revised position Chomsky calls the "extended standard theory" (EST).

The change in EST can be indicated by a modification in the diagram which we gave earlier, into the following EST version (with a line from Surface Structure to Semantic Component):



Later Chomsky dealt with some other "empirical issues" which distinguish EST and generative semantics.⁶⁹ There he summarizes:

The extended standard theory permits only base rules, transformational rules, a simple outcondition on surface structures (and certain other conditions), and rules of interpretation applying to deep and surface (perhaps also shallow) structures. To be more pre-

cise, the latter rules apply to phonetically interpreted surface structures. Furthermore, there are general conditions on the application of transformations

The basic property of transformations is that they map phrase-markers into phrase-markers. Each transformation applies to a phrase-marker on the basis of the formal configurations expressed in it, and quite independently of the meanings or grammatical relations expressed by these formal configurations.⁷⁰

The label "interpretive semantics" is applied to the semantic view of EST, in contrast to "generative semantics." Despite extending his theory, Chomsky maintains that semantics still plays an interpretive role in a grammar, rather than a generative one. The syntax of a language is not derived from the semantic content of its structures, but is the basis for both the semantic and phonological output.⁷¹

The second issue, which chronologically arose first but has received less discussion, is billed as the "lexicalist position" vs. the "transformationalist position."⁷² Though the lexicalist position is now associated with EST, originally all TG grammar assumed a transformationalist position. The issue is that of the relation between verbs/verbals and derived nominals, e.g., *refuse/refusing* and *refusal*. The process is called nominalization (T nom). The original work was done by Robert B. Lees.⁷³ His was the first dissertation completed under Chomsky (and the first in Linguistics at MIT).⁷⁴ Chomsky's original exposition of TG grammar presupposed certain

features inherited directly from Zellig Harris. We have already seen⁷⁵ that Harris considered nominals to be derived from cognate verbs. As Chomsky had initially assumed this stance from Harris, so Lees in turn also adopted it as the framework for his work on nominalizations.

Lees stated his goal as the study of "that set of rules by means of which new nouns are created."⁷⁶ He took that to mean *all* nominal constructions which could be thought of as derived from sentences. After summarizing the basic PS rules and T rules he developed rules for various nominalizations.⁷⁷ However, Lees nowhere presents his theoretical rationale for treating derived nominals as transformations, other than the basic observation that they involve some of the same restrictions on use as do their cognate verbs.

Chomsky in turn used Lees' *Grammar* in his own further writings. In a 1962 paper⁷⁸ he accepted the transformational origin of such pairs of phrases as

- (29) (a) his refusing to participate
- (b) his refusal to participate

- (30) (a) his rejecting the offer
- (b) his rejection of the offer,

while at the same time noting differences in the two types of constructions, e.g., the second member of each pair, the "derived nominal," can include adjectives (his *strange* refusal

to participate), but the first, "gerundive," cannot. Two years later his position appeared to remain the same:

Clearly, the words *destruction*, *refusal*, etc., will not be entered in the lexicon as such. Rather, *destroy* and *refuse* will be entered in the lexicon with a feature specification that determines the phonetic form they will assume . . . when they appear in nominalized sentences.⁷⁹

Already here, however, he notes some problems involved with this approach,⁸⁰ and in a note⁸¹ suggests an alternative which he was soon to fully develop into a strong position.

In "Remarks on Nominalization,"⁸² Chomsky forcefully argues against his earlier, "transformationalist," stance and opts completely for a "lexicalist" position. These terms reflect his statement of the issue: whether to "extend the base rules to accommodate the derived nominal directly" (through lexical insertion) or to "simplify the base, excluding these forms, and derive them by some extension of the transformational apparatus," insisting that this is not a matter of linguistic theory, but "entirely an empirical issue."⁸³ The differences which he originally noted (some already acknowledged by Lees) between gerundives and derived nominals are here greatly expanded (e.g., gerundives are formed much more freely than derived nominals, and even where they are parallel, they often differ semantically, so that they cannot be paraphrased in the same way). The two can be explained differently because of Chomsky's reorganization of the base of a grammar (discussed above), which separated the

lexicon from the PS rules and assigned contextual features to lexical entries. Thus he proposes

as a tentative hypothesis, that a great many items appear in the lexicon with fixed selectional and strict subcategorization features, but with a choice as to the features associated with the lexical categories noun, verb, adjective. The lexical entry may specify that semantic features are in part dependent on the choice of one or another of these categorial features.⁸⁴

Adopting this position involves other consequences. The most immediate is that the PS rules must account for these constructions in the base. If, for example, (29a) and (29b) are generated by separate PS rules as VP and NP, respectively, then noun phrases must be able to generate the same set of components as verb phrases (and adjective phrases). Therefore Chomsky proposed the following rules:

- (31) (a) NP $\rightarrow$ N Comp
 (b) VP $\rightarrow$ V Comp
 (c) AP $\rightarrow$ A Comp

- (32) Comp $\rightarrow$ NP, S, NP S, NP Prep-P, Prep-P Prep-P, etc.⁸⁵

This formulation of the rules allows for a generalized treatment of all complement constructions, whether used with noun, verb or adjective. Chomsky raises, and then answers, various objections which could be offered against such a position. In summary he states:

it seems that the transformationalist hypothesis is correct for the gerundive nominals [e.g., John's refusing the offer] and the lexicalist hypothesis for the derived nominals [e.g., John's refusal of the

offer] and perhaps, though much less clearly so, for the mixed forms [e.g., John's refusing of the offer].⁸⁶

The phenomenon of gerunds has been further investigated more recently by Thomas Wasow and Thomas Roeper.⁸⁷ They provide an excellent defense of the lexicalist position by refining gerunds into two classes -- nominal and verbal. Verbal gerunds correspond to Chomsky's gerundive nominals, i.e., they are transforms of sentences and thus in the deep structure are directly dominated by S. In contrast, some *-ing* constructions have the internal structure of NP's and so are not transforms at all but lexical items which are directly dominated in the deep structure by NP. Wasow and Roeper list six "specific structural differences" between nominal and verbal gerunds: nominal gerunds (1) "are introduced with articles," (2) "take preceding adjectival modifiers," not "following adverbial modifiers," (3) "can be pluralized," (4) "express the grammatical relation of direct-object-of in a prepositional phrase," not with "the direct object immediately following the verb," (5) use the negative *no* rather than *not*, (6) do "not permit a tense marker."⁸⁸ These nominal gerunds function like Chomsky's derived nominals and cannot be formed freely from all verb stems as can verbal gerunds. Chomsky's third category, "mixed forms," in reality contains both genuine nominals and verbals which have *of* inserted by analogy with nominals, and thus "sound considerably more natural if

the preposition *of* is deleted, i.e., if verbal gerunds are substituted for nominal gerunds."⁸⁹

In his Extended Standard Theory position Chomsky conjoins the two issues just discussed (the interpretive and the lexicalist), in that he presupposes the view of interpretive semantics when he defends his lexicalist hypothesis, pinning the transformationalist hypothesis to the generative semantics grammarians.

Within the EST position, the ongoing discussion has taken several different directions, often focusing on details of linguistic theory or on matters specific to the English language and therefore not of direct interest to our present concerns. However, one further development in Chomsky's linguistic theory is directly pertinent to this study: the theory of complementation.

PS rules (31) and (32) employed the notion of complement (Comp) as a possible component in the expansion of any major phrasal node (NP, VP, AP). One of Chomsky's students, Joan Bresnan, has significantly modified the theoretical approach to complementation.⁹⁰ The theory has gone through several stages before reaching the form in which it is currently used by Chomsky.⁹¹ Its main feature is the introduction of a new PS rule:

(33) $\bar{S} \rightarrow \text{COMP } S^{92}$

Every embedded S^{93} is rewritten COMP (= complementizer, to be clearly distinguished from the earlier Comp = complement of [31] and [32]) and S, making COMP a node in the initial phrase-marker. A further PS rule delineates the features of COMP in English:

$$(34) \text{ COMP} \longrightarrow \left\{ \begin{array}{c} \pm \text{ WH} \\ \text{for} \\ \emptyset \end{array} \right\}^{94}$$

+WH is the feature associated with the formation of interrogatives and -WH with non-interrogatives (relative clauses and *that*).⁹⁵ Certain transformations, such as infinitive, do not require any lexical realization of COMP, which is represented by $\emptyset$ ("null").

One other central concern in Chomsky's current work is also the result of one of his students, Joseph Emonds.⁹⁶ The essence of this concern is that transformational operations not be allowed total freedom to rearrange the structure of a phrase-marker. In fact, transformations operate within narrow restrictions, or constraints. Emonds argues that there is a general structure-preserving constraint that operates in all languages, so that any transformational operation involving a given node results in an altered phrase-marker that places that node in a position in which it could have been generated in the initial phrase-marker. E.g., a transformation that moves an NP must move it only to a position in which the PS rules could generate NP. Chomsky's

most recent work on transformations⁹⁷ has focused on two features of such movement rules, with the goal of eliminating the need for conditions on the application of transformational rules. The first is his increasingly firm conviction that *all* transformational rules of the "core grammar" (of English) are of the NP-movement or *wh*-movement type.⁹⁸ The second is that the moved NP or *wh* leaves behind a trace (*t*) in the position it has vacated. The presence of *t* is then used by Chomsky as the explanation of how a grammar blocks certain otherwise unacceptable sequences which would result from the free application of movement rules. Emmon Bach offers a critical analysis of these two arguments in his response to Chomsky's "WH-Movement" paper,⁹⁹ noting that the removal of conditions on transformations is accomplished at the expense of considerably complicating the set of necessary "surface" rules and filters. Bach suggests that these changes really present a significantly different theory, which he dubs REST ("revised extended standard theory"), in that it undercuts the original basis for the transformational component in the grammar. Moreover, the movement rules are far too specific to English to be justified as part of Universal Grammar. The theory of trace, however, merits serious consideration within the earlier framework of movement rules as one typical feature of transformations.¹⁰⁰

In the analysis which follows we will adopt Chomsky's EST, including his interpretive semantics and lexicalist positions,

as modified by his current discussion of complementation and general structure-preserving constraints. The lexicalist position is especially important because we will concentrate our study on nominalizations and interpret that to *exclude* derived nominals. We will also accept the Wasow and Roeper distinction between nominal and verbal gerunds (though we call them participles).

Since the transformations we are studying often involve NP nodes, the movement constraint is an important restriction to observe in the formulation of our transformational rules. However, working with a language that uses inflection more than word order, we cannot limit transformations to movement rules.

CHAPTER THREE

TRANSFORMATIONAL RULES FOR NOMINALIZATIONS IN HELLENISTIC GREEK

In the previous chapter we sketched the development of Chomsky's transformational-generative (TG) approach to syntax. While the goal of his linguistics is to arrive at the features of Universal grammar (UG), the actual work was done on English and therefore the results often take the shape of rules for English grammar. As these rules are debated and reformulated in the literature, new levels of understanding are achieved about UG, which in turn affects the formulation of new rules of English. So each continues to have its direct influence on the other as both are being investigated. Linguists are still far from writing even an outline of either a TG English grammar or UG; but in the meantime the results of the work already done on TG grammar has begun to be applied to many other languages.¹

In our survey of the study of Hellenistic Greek (HG) grammar, we saw that work was just getting underway using structuralist linguistics when the TG revolution began. During the twenty years since then no significant work has yet been written on HG grammar using TG linguistics.² However, during the

past five years a Hellenistic Greek Linguistics Project has been engaged in research directed toward that goal.³ The Project has in progress *An Outline of a Transformational-Generative Grammar of Hellenistic Greek*,⁴ which we will use as the over-all framework within which to investigate nominalizing transformations. We will also adopt its notational symbols (given in Appendix I).

Nominalizations are transformations which embed sentences into noun phrases, or, put less formally, they are the syntactic devices which allow an embedded sentence (traditionally, dependent clause) to function nominally. Embedded sentences can also function adnominally and adverbially. All of this can be expressed as part of a set of basic PS rules:⁵

- (1) (a) $S \rightarrow NP [AUX] VP$
- (b) $NP \rightarrow \left\{ N (\bar{S}) \right\}$ (adnominal)
- (c) $\left\{ \bar{S} \right\}$ (nominal)
- (d) $VP \rightarrow V (Adv)$
- (e) $Adv \rightarrow \left\{ NP \right\}$
- (f) $\left\{ \bar{S} \right\}$ (adverbial)
- (g) $\bar{S} \rightarrow COMP S$

Embedding transformations have to do with (1b), (1c), and (1f), yielding, respectively, adnominalizing transformations or adnominalizations, nominalizing transformations or nominalizations and adverbializing transformations or adverbializations. Any embedding transformation thus implies rule (1g), meaning that

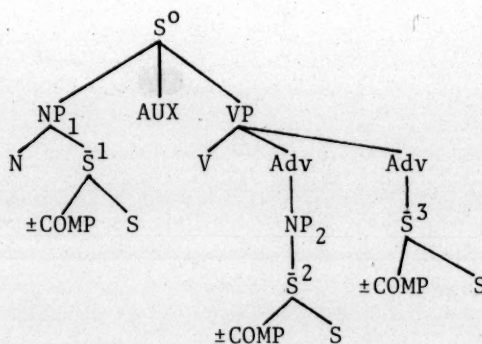
the embedding is accomplished through the use of COMP as its embedding device. If COMP is not realized as a Complementizer then embedding is achieved morphologically by means of either a participle (Vpt) or an infinitive (Vif). For ease of reference we will refer to this method of embedding as non-Comp. In fact, we can incorporate non-Comp into rule (1g) as (1g'):

$$(1) (g') \bar{S} \rightarrow \pm \text{COMP } S$$

with +COMP realized as the presence of a Complementizer (Comp) and -COMP realized as a morphological element in the embedded S, in the case of Greek attached to the verb.

We can indicate these various possibilities also in the form of a phrase marker (PM):

(2)



The matrix sentence (S^0) has three embeds: 1) $\bar{S}^1$, functioning adnominally; 2) $\bar{S}^2$, functioning nominally; and 3) $\bar{S}^3$, functioning adverbially. We could also have put the nominal embed ($\bar{S}^2$) under NP_1 and the adnominal construction ($N \bar{S}^1$)

under NP₂; i.e., any NP can have either an adnominal or nominal embed, regardless of where in the structure the NP is. In contrast, an adverbial embed, by definition, can only be in VP; therefore we make the distinction between $\bar{S}^2$ and $\bar{S}^3$ by the presence of NP₂.

This study then will focus on the combination of (1c) NP → $\bar{S}$ and (1g¹) $\bar{S} \rightarrow \pm\text{COMP } S$ (e.g., $\bar{S}^2$), to determine the embedding process in HG for nominalized embeds: When are +COMP and -COMP chosen? How is that choice related to the function of the NP node into which S is embedded? And, What are the actual embedding transformations in each case?

We will begin with nominalizations that use a complementizer, i.e., have the feature +COMP. The most frequent nominalizing Comp is $\delta\tau\iota$ (it is also the second most frequent Comp in general, next to the adnominalizing Comp $\delta\varsigma$).

Here are examples of its nominalizing uses in the New Testament:

- (3) (a) Jn 11:20 ἤκουσεν ὅτι Ἰησοῦς ἔρχεται
She heard that Jesus was coming
- (b) Mk 2:1 ἠκούσθη ὅτι ἐν οἴκῳ ἐστίν
It was reported that he was at home
- (c) Jn 4:1 ἔγνω ὁ Ἰησοῦς ὅτι ἤκουσαν οἱ φαρισαῖοι ὅτι
Jesus knew that the Pharisees had heard that

- (4) (a) Jn 9:20 οἶδαμεν ὅτι οὗτός ἐστιν ὁ υἱὸς ἡμῶν
We know that this is our son
- (b) Mk 6:49 ἔδοξαν ὅτι φάντασμα ἐστιν
They thought that it was a ghost
- (c) Jn 11:27 ἐγὼ πεπίστευκα ὅτι σὺ εἶ ὁ χριστός
I believe that you are the Christ
- (d) Jn 6:24 εἶδεν ὁ ὄχλος ὅτι Ἰησοῦς οὐκ ἔστιν ἐκεῖ
The crowd saw that Jesus was not there
- (e) Heb 13:18 πειθόμεθα ὅτι καλὴν συνείδησιν ἔχομεν
We are convinced that we have a clear conscience
- (5) (a) Mk 4:38 οὐ μέλει σοι ὅτι ἀπολλύμεθα;
Don't you care that we are perishing?
Doesn't it concern you that we are perishing?
- (b) Gal 3:11 ὅτι ἐν νόμῳ οὐδεὶς δικαιοῦται παρὰ τῷ θεῷ
ὁ ἥλον
It is clear that no one is justified before God by the law
- (c) 1 Cor. 1:11 ἐδηλώθη μοι . . . ὑπὸ τῶν Χλόης ὅτι
ἔριδες ἐν ὑμῖν εἰσιν
It has been made clear to me . . .
by Cloe's people that there is strife among you
- (6) (a) Ac 21:31 ἀνέβη φάσις τῷ χιλιάρχῳ . . . ὅτι ὅλη
συγχύνεται Ἱερουσαλὴμ
A report reached the commander . . . that
all Jerusalem was in an uproar
- (b) Phlp 2:22 τὴν δοκιμὴν αὐτοῦ γινώσκετε, ὅτι . . .
ἔδουλευσεν . . .
You know his character, that . . . he
served . . .

- (c) 1 Jn 5:11 αὕτη ἐστὶν ἡ μαρτυρία, ὅτι ζωὴν αἰώνιον
 ἔδωκεν ἡμῖν ὁ θεός
 The witness is this: God has given us
 eternal life
- (d) Rom 6:6 τοῦτο γινώσκοντες, ὅτι
 Knowing this, that
- (e) Ac 4:13 ἐπεγίνωσκον αὐτοὺς ὅτι σὺν τῷ Ἰησοῦ ἦσαν
 They recognized them, that they had been
 with Jesus
- (7) (a) Ac 20:38 εἶρήκει ὅτι οὐκέτι μέλλουσιν τὸ πρόσωπον
 αὐτοῦ θεωρεῖν
 He had said that they would never see
 his face again
- (a') Ac 20:25 ἐγὼ οἶδα ὅτι οὐκέτι ὄψεσθε τὸ πρόσωπόν
 μου
 I know that you will never see my face
 again
- (b) Mk 6:18 ἔλεγεν ὁ Ἰωάννης τῷ Ἡρώδῃ ὅτι οὐκ
 ἔξεστίν σοι
- (b') Mt 14:4 ἔλεγεν ὁ Ἰωάννης αὐτῷ οὐκ
 ἔξεστίν σοι
 John had said to Herod, "It is not lawful
 for you"
- (c) Jn 18:8 ἀπεκρίθη Ἰησοῦς εἰπον ὑμῖν ὅτι ἐγώ εἰμι
 Jesus answered, "I told you, 'I am'"
- (c') Jn 18:5 λέγει αὐτοῖς ἐγώ εἰμι
 He said to them, "I am"
- (d) Jn 14:28 ἤκουσατε ὅτι ἐγὼ εἶπον ὑπάγω
 "You heard me say, 'I go away'"

The sentences in (3) all have the verb ἀκούω (I hear). In
 each case ὅτι marks the beginning of the nominal embed; i.e.,

the $\delta\tau\iota$ -clause is functioning as an NP, the same as would a lexical NP. Compare (3a) with (3a'), this time employing limited bracketing:

(3) (a) Jn 11:20 ἤκουσεν [$\overset{NP}{\bar{S}}$ [$_{COMP}\delta\tau\iota$][$_{S}'\text{Ιησοῦς ἔρχεται}$]]

(a') Ac 5:24 ἤκουσαν [$_{NP}$ τοὺς λόγους τούτους].

(They heard these words)

In (3a') the NP mode is filled with a lexical NP, which then becomes accusative (in the final morphological transformational cycle) because of its function in relation to the verb, whereas in (3a) the NP is rewritten as $\bar{S}$, which in turn is rewritten COMP and S. It is noteworthy here that S retains its original present tense, even though embedded into a matrix clause that is past tense, in contrast to English, which requires a sequence of tenses that changes the embedded S into past tense. So in Greek, S is able to function nominally solely with the use of +COMP $\rightarrow \delta\tau\iota$, an embedding device that cannot change morphologically.

To further demonstrate that the $\bar{S}$ in (3a) functions as does the NP in (3a'), we note that it is acceptable to apply a passive transformation (T_{PASS}) to either one, giving sentences analogous to (3b) and (3b'):

(3) (b) Mk 2:1 ἠκούσθη [$\overset{NP}{\bar{S}}$ [$_{COMP}\delta\tau\iota$][$_{S}\epsilon\nu\ \omicron\lambda\kappa\omega\ \epsilon\sigma\tau\acute{\iota}\nu$]]

(b') Ac 11:22 ἠκούσθη [$_{NP}$ ὁ λόγος].

(The report was heard)

In (3b') a structure similar to (3a') has undergone T_{PASS} , resulting in NP now functioning as subject, i.e., moved in the phrase marker to the position of NP dominated by S and eventually given nominative form, and V now marked for passive. When the same T_{PASS} is applied to a structure like (3a) to yield (3b), the V is again marked passive and the NP again becomes the dominant NP, functioning as subject. However, the nominalizing transformation (T_{NOM}) remains the same as in (3a): $+COMP \rightarrow \delta\tau\iota$, and S is unaffected, including its tense. So our initial formulation of T_{NOM} is $(T_1) T_{NOM}: +COMP \rightarrow \delta\tau\iota$.

The next example

- (3) (c) Jn 4:1 ἔγνω ὁ Ἰησοῦς [$\bar{s}$ ὅτι ἤκουσαν οἱ Φαρισαῖοι
[$\bar{s}$ ὅτι....]]

shows that this nominalizing process is cyclic, i.e., a sentence like (3a) can itself be embedded as a nominal into another sentence. Such repeated embedding was described in the previous chapter as recursive right-embedding,⁶ since the process of adding an embedded sentence *after* the matrix is repeated within the embed itself.

The examples in (4) above are indicative of other sentences with similar nominalizations in the VP. In each case $\bar{s}$ again has $+COMP \rightarrow \delta\tau\iota$ and S in its original tense, which can be different from that of the matrix verb, as in (4b) and (4d). Another similarity of all the sentences in (3) and (4)

is that all the matrix verbs are of the same type, sometimes called perception verbs. They might better be called verbs of "cognition": hear, know, think, believe and see (the list could be extended--recognize, confess, understand, argue, remember). A distinctive feature of these verbs is that the content of whatever the verb "cognizes" may be expressed as a nominalization embedded with $\delta\tau\iota$. Though there is no agreed upon appropriate label for this verb-type or verb-class, TG linguistics has long recognized the need for subcategorizing verbs according to the kinds of embedding transformations that occur with them.⁷ These verbs would be marked in the lexicon for their subcategorization and selection features,⁸ e.g.,

(L₁) [+____ [_{COMP} $\delta\tau\iota$][S]]

would indicate, in the description of a verb, that it is acceptable (+) for this word to be inserted in the context ____ $\delta\tau\iota$ S. Most $\delta\tau\iota$ nominalizations do, in fact, occur in an NP that is dominated by the VP of this class of verbs.⁹ The most common verb of this class is the saying-verb λέγω/εἶπον, which will be treated separately below.

Nominalizations can also occur in an NP that is dominated by S, i.e., functioning as subject (in its initial phrase marker), though the possible constructions here are more limited. In

(5) (a) MK 4:38 οὐ μέλει σοι [_S^{NP} [_{COMP} $\delta\tau\iota$][_S ἀπολλύμεθα]

the embedded sentence is a nominalization functioning as the subject of an "impersonal" verb. This class of verbs is marked in the lexicon for the selectional feature (L_2):

(L_2) [$+[_{NP}\bar{S}]$ — [$_{NP}$ + HUMAN]],

indicating that this word is an acceptable lexical insert into a PM that has $\bar{S}$ as its dominant NP and as its adverbial NP a lexical noun with the feature +HUMAN. What makes the construction "impersonal" is the nominalization functioning as subject, with the "personal" NP as an adverbial (in the dative case). Furthermore, both German and English, the languages in which the standard grammars are written, have a stylistic transformation often used in such sentences that moves the "that/*dass*" clause (nominalization) to the end of the sentence, leaving an empty initial NP that is then filled by "it/*es*," thereby emphasizing the "impersonal" content of the NP functioning as subject.

The other impersonal constructions with $\delta\tau\iota$ are similar to (5b):

(5) (b) Gal 3:11 [$_{\bar{S}}^{NP}$ [$_{COMP}$ $\delta\tau\iota$]] [$_S$ $\acute{\epsilon}\nu$ νόμῳ δικαιούται...]]
 $\delta\eta\lambda\omicron\nu$.

The $\delta\tau\iota$ -embed again comprises the entire dominant NP, but the VP consists of a neuter singular adjective, syntactically analyzed as an equative VP with the equative (lexically empty)

verb deleted (indicated in the deep structure by $\Delta=$). The stem $\delta\eta\lambda-$ also occurs in the verbal form $\delta\eta\lambda\omega$ and is found in Attic in the "impersonal" construction $\delta\eta\lambda\omega\tau\ \mu\omicron\iota\ \delta\tau\iota\dots$,¹⁰ directly parallel to (5a), and also analogous to (5b). So the stem $\delta\eta\lambda-$ has the lexical features of (L_2) regardless whether it appears in the sentence as (lexically) a verb or an adjective. This is consistent with the lexicalist position described in the previous chapter.¹¹ Constructions of this type are far less common than those with the earlier feature (L_1). $\mu\acute{\epsilon}\lambda\epsilon\iota$ is the only such verb to gain currency in Greek (see also Lk 10:40) and the primary other adjective besides $\delta\acute{\eta}\lambda\omicron\nu$ (see 1 Cor 15:27 and $\pi\rho\acute{o}\delta\eta\lambda\omicron\nu$ in Heb 7:14) is $\varphi\alpha\nu\epsilon\rho\acute{o}\nu$ (see also Ac 4:16). There are other "impersonal" verbs and adjectives but they use infinitive embeds and thus will be discussed later.

Also in the category of $\delta\tau\iota$ -embeds as subject is (5c):

(5) (c) 1 Cor 1:11 $\acute{\epsilon}\delta\eta\lambda\acute{\omega}\theta\eta\ \mu\omicron\iota\ \dots\ \upsilon\pi\acute{o}\ \tau\acute{\omega}\nu\ \chi\lambda\acute{o}\eta\varsigma\ [\overset{NP}{\S}\ \delta\tau\iota\dots]$ which is further related to (5b) in that the matrix VP in each is built on the same lexical stem-- $\delta\eta\lambda-$. However the verb form in (5c) is passive, so in the deep structure the $\delta\tau\iota$ -embed is not the dominant NP, but an adverbial NP in the VP, like the $\delta\tau\iota$ -embeds in (3)-(4). Therefore (5c) is really more akin to (3b) *structurally*, though it *lexically* resembles (5b), and in its surface structure it is an "impersonal" construction like

(5a). The same pattern exists for $\varphi\alpha\nu\epsilon\rho\acute{o}\nu$ and its corresponding passive verb (see 2 Cor 3:3 and 1 Jn 2:19). The apparent similarity of (5c) to both (5a) and (5b), and to (3b), results from the combined features of $\acute{\epsilon}\delta\eta\lambda\acute{\omega}\theta\eta$: 1) its stem is $\delta\eta\lambda-$, therefore it has the same lexical features as (5b); 2) it is an $--\acute{o}\omega$ verb, and thus adds a "causative," or better, "factive"¹² feature to a structure like (5b), making the embed function adverbially as its "content" clause, which therefore gives it a deep structure similar to (3b); However, 3) the passive transformation is then applied, making the embed again function as subject, corresponding to (5a).¹³

We have been discussing the function of nominalizations according to the NPs into which they are embedded. Some are embedded into an NP that is part of VP (functioning adverbially) and others are embedded into NP dominated by S (functioning as subject). There is yet a third syntactic position for an NP, and that is in apposition to another NP, which can be indicated by NP<Ap>NP, with both NPs having the same syntactical function (and therefore in the same case), though not having any direct syntactic link. Appositive NPs occur most often with names and titles ($\text{'Ιησοῦς ὁ Ναζωραῖος; Ἀγρίππας ὁ βασιλεὺς}$) or with personal pronouns ($\text{ἐγὼ Παῦλος; ὑμεῖς οἱ θαρισταῖοι}$), but they can also be used as in (6a):

(6) (a) Ac 21:31 ἀνέβη [_{NP}φάσις]...[_S^{NP}ὅτι...]

The $\delta\tau\iota$ -embed is a nominalization functioning appositively with the dominant NP of the sentence. The relation between the two NPs is not made any more explicit in the surface structure. However, the nouns that are found with appositive $\delta\tau\iota$ -embeds are based on stems that share the "cognition" feature which we associated with the verb-class that is used with $\delta\tau\iota$ -embeds. In both cases the most common type is the verb/noun of speaking ($\lambda\acute{\epsilon}\gamma\omega/\epsilon\lambda\pi\omicron\nu$; $\lambda\acute{o}\gamma\omicron\varsigma/\rho\acute{\eta}\mu\alpha$). We will discuss these in more detail below when we consider direct discourse.

The $\delta\tau\iota$ -embed in (6b)

(6) (b) Phlp 2:22 [_{NP} τὴν δοκιμὴν αὐτοῦ] γινώσκετε [_S^{NP} $\delta\tau\iota$]

is in apposition to an NP that does not have the "cognition" feature; however, the matrix verb is a member of the verb-class which has that feature, suggesting that, in the hierarchical structure, both NPs are directly dominated by the VP, as well as being in apposition to each other. This also argues against any deep structure explanation which initiates all appositives as equative sentences, since the two NPs in (6b) are able to be in apposition only because each one is independently an acceptable insertion into this VP, not because the two would be an acceptable equative sentence. Further evidence is seen in Paul's use of the formula οὐ θέλω ὑμᾶς ἀγνοεῖν, which is followed directly by a $\delta\tau\iota$ -embed in Rom 1:13 and 1 Cor 10:1, but

in Rom 11:25 the $\delta\tau\iota$ -embed is in apposition to another NP, $\tau\delta\ \mu\upsilon\sigma\tau\acute{\eta}\rho\iota\omicron\nu\ \tau\omicron\upsilon\tau\omicron$, an adverbial NP in the accusative case. The verb involved, $\acute{\alpha}\gamma\nu\omicron\acute{\epsilon}\omega$, is used by Paul with either an NP accusative (Rom 10:3; 2 Cor 2:11) or a $\delta\tau\iota$ -embed (Rom 2:4; 6:3; 7:1), i.e., it is a member of the "cognition" verb class which is feature-marked for both constructions, and thus it is acceptable in this VP to use the two together in apposition. (Similar examples are in 2 Cor 9:2; Eph 3:2-3; Jas 5:11.)

The most common appositive construction is a $\delta\tau\iota$ -embed in apposition to a demonstrative determiner (traditionally called a demonstrative pronoun), either in an equative sentence like (6c) or in a "cognition" VP like (6d). In (6c)

(6) (c) 1 Jn 5:11 $[\text{NP}_{\text{Dd}}^{\text{NP}} \alpha\upsilon\tau\eta] \acute{\epsilon}\sigma\tau\acute{\iota}\nu [\text{NP}^{\text{NP}} \acute{\eta}\ \mu\alpha\rho\tau\upsilon\rho\acute{\iota}\alpha] [\text{S}^{\text{NP}} \delta\tau\iota\dots]$
 it is not self-evident which of the first two NPs is functioning as subject nor to which one the $\delta\tau\iota$ -embed is in apposition. This particular sequence, Dd + V= + NP + $\bar{S}$, is typically Johannine (ten times with $\alpha\upsilon\tau\eta$ alone). The use of $\alpha\upsilon\tau\eta \acute{\epsilon}\sigma\tau\acute{\iota}\nu$ elsewhere, however, suggests a different initial structure, similar to (6c'):

(6) (c') 1 Cor 9:3 $[\text{NP}^{\text{NP}} \acute{\eta}\ \acute{\epsilon}\mu\grave{\eta}\ \acute{\alpha}\pi\omicron\lambda\omicron\gamma\acute{\iota}\alpha] \dots \acute{\epsilon}\sigma\tau\acute{\iota}\nu [\text{NP}_{\text{Dd}}^{\text{NP}} \alpha\upsilon\tau\eta]:$
 $[\text{S}^{\text{NP}} \mu\grave{\eta}\dots];$
 (My reply . . . is this: Don't we
 have . . . ?)

indicative of the non-Johannine uses (Ac 8:32; 2 Cor 1:12; Jas 1:27). Thus we take the third NP in both (6c) and (6c')

to be in apposition to αὕτη, which in the Johannine style is placed first. We also note that the dominant NP in each is formed from a lexical stem (μαρτυρ-, ἀπολογ-) that has the "cognition" feature marking, i.e., their cognate verbs (μαρτυρέω and ἀπολογέομαι) belong to the "cognition" verb-class. So the syntax of the ὅτι-embed in (6c) is the same as in (6a). For the same reason the ὅτι-embed in (6d)

(6) (d) Rom 6:6 $\left[\begin{smallmatrix} \text{NP} \\ \text{Dd} \end{smallmatrix} \text{τοῦτο} \right]$ γινώσκοντες $\left[\begin{smallmatrix} \text{NP} \\ \text{S} \end{smallmatrix} \text{ὅτι...} \right]$

has the same syntax as in (6b). The two NPs are in apposition, but each one is an acceptable insert into a VP with the feature markings of the ("cognition") matrix verb.

An extension of the construction just discussed in (6b) and (6d) is found in (6e):

(6) (e) Ac 4:13 ἐπεγίνωσκον $\left[\text{NP} \text{αὐτοῦς} \right]$ $\left[\begin{smallmatrix} \text{NP} \\ \text{S} \end{smallmatrix} \text{ὅτι...ᾤσαν} \right]$

In the surface structure the two NPs appear to be in apposition. However, the embedded sentence has as its dominant VP an NP identical to the preceding lexical NP. Grammars traditionally describe this as ὅτι preceded by the subject of its clause. The linguistic explanation offered by TG grammar for the analogous infinitive construction is that the NP involved is *raised* from its position in the embed to a position in the matrix VP.¹⁵ Apparently in Greek such a movement rule is permitted in VPs that have "cognition" verbs, i.e., their adverbials can be either a lexical NP or a ὅτι-embed. When the ὅτι-

embed occurs, its dominant NP can optionally be moved into the adverbial position of a lexical NP, leaving the rest of the $\delta\tau\iota$ -embed unaffected. Since in Greek the embedded verb retains the person and number marking of the dominant NP, even if it is not filled lexically, removing the "subject" NP does not change the syntax of the embedded sentence. Most instances of this phenomenon involve personal pronouns, which only occur as dominant NPs when emphatic, so in (6e'):

- (6) (e') Mt. 25:24 $\epsilon\gamma\omega\nu$ [$_{NP}$ σε] [$_{S}^{NP}$ $\delta\tau\iota$ σκληρὸς ἐὶ
ἀνθρώπος]¹⁶

it is not surprising that $\sigma\epsilon$ is omitted in some manuscripts (D 0 46 1207 1391), in effect nullifying the raising transformation, nor that Luke uses a different matrix verb ($\epsilon\phi\omicron\beta\omicron\upsilon\mu\eta\nu$) which makes $\delta\tau\iota$ causal and not a nominalization.¹⁷ (Likewise, it is not a transformation used in English with *that*-constructions, but only with infinitives.) This raises some doubt about the status of the raising transformation with $\delta\tau\iota$ -embeds, but we can say that the reason it is possible at all is because of the feature markings on "cognition" verbs, and that where it occurs it is not an appositive construction but a raising transformation from an embed of the type we saw in (4).

The one factor common to all the sentences in (6) is that the "cognition" marking is present on the lexical stem that is

directly related to the appositive embed. In (6b), (6d) and (6e) it was a feature of the matrix verb, as in (3) - (4) above. In (6a) and (6c) the lexical stem with this marking was the noun in apposition to the embed. Again, as in (5) above, this explanation is offered within the lexicalist position, wherein the feature markings on a lexical stem are common to whatever verbal or nominal forms it takes.

We have postponed the discussion of one of these stems, or actually subgroup of stems, until we saw the features of the rest of the class. Our discussion now will focus on the use of $\delta\tau\iota$ -embeds with $\lambda\acute{\epsilon}\gamma\omega$ and $\epsilon\lambda\pi\omicron\nu$. The $\lambda\acute{\epsilon}\gamma\omega/\epsilon\lambda\pi\omicron\nu$ construction most analogous to those in (4) is so-called indirect discourse. Compare (7a) and (7a'):

- (7) (a) Ac 20:38 $\epsilon\lambda\omicron\gamma\eta\kappa\epsilon\iota$ [$\overset{NP}{S}$ $\delta\tau\iota$ [S $\omicron\upsilon\kappa\acute{\epsilon}\tau\iota$ $\mu\acute{\epsilon}\lambda\lambda\omicron\upsilon\sigma\iota\nu$ $\tau\delta$
 $\pi\rho\delta\sigma\omega\pi\omicron\nu$ $\alpha\upsilon\tau\omicron\upsilon$ $\theta\epsilon\omega\rho\epsilon\iota\nu$]]
 (a') Ac 20:25 [S $\omicron\upsilon\kappa\acute{\epsilon}\tau\iota$ $\delta\psi\epsilon\sigma\theta\epsilon$ $\tau\delta$
 $\pi\rho\delta\sigma\omega\pi\acute{\omicron}\nu$ $\mu\omicron\upsilon$]

The S embedded by $\delta\tau\iota$ in (7a) refers to the direct statement made in (7a'), however both the first person pronoun and the second person marking on the verb are changed to the third person, making this an indirect reference to the statement given directly in (7a'). When an original statement is quoted directly, first and second person features are retained, as in (7b), and $\delta\tau\iota$ is deletable, as in (7b'):

- (7) (b) Mk 6:18 ἔλεγεν [NP₁ τῷ Ἡρώδῃ] [S^{NP} ὅτι [S_{οὐκ ἐξεστίν}
[NP₂ σοι]]]
- (b') Mt 14:4 ἔλεγεν [NP₁ αὐτῷ] [S_{οὐκ ἐξεστίν}
[NP₂ σοι]]

Matthew's deletion of ὅτι in (7b') in contrast to Mark in (b) is rather typical,¹⁸ suggesting that Matthew and Mark reflect different rules for deleting ὅτι in direct discourse. Thus it is likely that there are rules that will explain the various constructions in which each author deletes ὅτι with direct discourse, but the formulation of such rules requires analysis beyond the scope of this study. The clearest case, offered here as an example, seems to be in John, especially in the use of εἶπον.

Consider again (7c) and (7c'):

- (7) (c) Jn 18:8 ἀπεκρίθη Ἰησοῦς [S₁ εἶπον ὑμεῖν [S^S ὅτι [S₂ ἐγώ
εἶμι]]]
- (c') Jn 18:5 λέγει αὐτοῖς [S₁ ἐγώ
εἶμι]

In (7c) the answer given in S² is the repetition of something that had already been said, in (7c'), but now ὅτι is used to mark what was originally the direct discourse, the S of (7c'). This suggests that John uses ὅτι as equivalent to our printing convention of single quotation marks within double quotation marks. This is much more restricted than the common adage that

ὅτι functions simply as optional quotation marks in Greek discourse. However, scribes did not always understand John's limited use of ὅτι and often treated it as though it were more freely deletable. We will note that along with the evidence for the Johannine use of εἰς ὅτι in direct discourse as follows:

Original Statement	Repeated in Discourse with ὅτι	ὅτι Omitted ¹⁹
1:48	1:50	Byz θ f ¹ pl
4:17a	4:17b	(made indirect in D)
6:30	6:36	
8:21	8:24	
[9:7	9:11	P ⁷⁵ A D Byz W Γ Δ Θ Λ Π X f ¹ f ¹³ pl] ²⁰
11:25	11:40	P ⁶⁶ 69
8:21	13:33	P ⁶⁶ K* D W 579 pc
16:14	16:15	
18:5	18:8	

There are also some instances when the repeated statement with ὅτι is introduced by narrative rather than by other direct discourse:

Original Statement	Repeated in Narrative with ὅτι	ὅτι Omitted
9:21	9:23	
13:10	13:11	K A Byz Γ Δ Θ f ¹ f ¹³ pm
17:12	18:9	

While the $\epsilon\lambda\pi\omicron\nu$ $\delta\tau\iota$ construction in Johannine discourse appears to be limited to introducing repeated statements (4:52; 5:15; 7:42 and 21:23 are indirect discourse; and 8:55 and 14:2 are hypothetical discourse with $\delta\omega$),²¹ it is not used in every such situation. The analogous examples which do not use $\delta\tau\iota$ are limited to constructions where the $\epsilon\lambda\pi\omicron\nu$ is itself part of an embed that is embedded with +COMP (often $\delta\tau\iota$).

Compare (7c) to (7d):

(7) (c) Jn 18:8 ἀπεκρίθη [$\bar{S}_1$ [COMP₁ —]] [$S_1\epsilon\lambda\pi\omicron\nu$ [$\bar{S}_2$ [COMP₂ $\delta\tau\iota$] [$S_2\ldots$]]]

(d) Jn 14:28 ἠκούσατε [$\bar{S}_1$ [COMP₁ $\delta\tau\iota$]] [$S_1\epsilon\lambda\pi\omicron\nu$ [$\bar{S}_2$ [COMP₂ —] [$S_2\ldots$]]]

In constructions like (7c) the direct discourse COMP (COMP₁) is always deleted in John, in contrast to the $\delta\tau\iota$ in COMP₂, which embeds repeated discourse within direct discourse. However, in constructions like (7d) $\bar{S}^1$ is embedded with +COMP, in which case the COMP of repeated discourse (COMP₂) is deleted.

The examples are:

Original Statement	Repeated in Embedded Discourse Without $\delta\tau\iota$	$\delta\tau\iota$ Inserted
1:15 ²²	($\delta\varsigma$) 1:30	
3:3	($\delta\tau\iota$) 3:7	
1:20	($\delta\tau\iota$) 3:28	p ^{66,75} 700 pc
4:50	($\delta\varsigma$) 4:53	Byz D W Θ 078 f ¹ al ²³

Original Statement	Repeated in Embedded Discourse Without δ_{TL}	δ_{TL} Inserted
7:34	(δ_S) 7:36	p^{66} pc
8:21	(δ_{TL}) 8:22	
10:30,33	(δ_{TL}) 10:36	
14:4,18	(δ_{TL}) 14:28	
13:16	(δ_S) 15:20	
16:16	(δ_S) 16:17	
16:16	(δ_{TL}) 16:19	
18:5	(ω_S) 18:6	

The above evidence suggests that the Johannine rule for δ_{TL} with $\epsilon\lambda\kappa\omicron\nu$ in direct discourse is: in the DELETION cycle, when "Delete Direct Discourse δ_{TL} " is applied, δ_{TL} is deleted only if its dominating $\bar{S}$ is itself part of another $\bar{S}$ embedded by +COMP, i.e., in the Johannine stylistic rules for direct discourse, the deletion of δ_{TL} in $COMP_2$ is blocked when $COMP_1$ is empty.

We have examined various nominalizations embedded with δ_{TL} . We have seen that the basic nominalizing transformation is apparently +COMP $\rightarrow$ δ_{TL} . We further discovered that there are only two contexts in which this occurs: 1) as the dominant NP, functioning as subject of "impersonal" constructions, which is limited to only a few lexical stems, and 2) primarily as adverbial and appositive NPs, related to lexical stems of one

type, which we called "cognition." Such stems can become either verbs having $\delta\tau\iota$ -embeds as adverbial NPs, or nouns having $\delta\tau\iota$ -embeds as appositives.

These limitations all have to do with the matrix sentence into which the nominalization is embedded. We need finally to consider the nature of the embeds themselves. Another look at the $\delta\tau\iota$ -embeds in (3)-(7) reveals that the S which is embedded is in each case a declarative sentence, to the exclusion of both commands and questions.

The use of command forms (imperative and hortatory subjunctive) in embedded constructions is limited to direct discourse, where the $\delta\tau\iota$ is deleted. In our discussion of the Johannine stylistic rule for $\delta\tau\iota$ with repeated discourse, we noted that where $\delta\tau\iota$ would otherwise seem to be required, it is absent when the embed is a command.²⁴ There are in fact no instances in HG of a command in a $\delta\tau\iota$ -embed. Blass-Debrunner cites a "hortatory subjunctive" and an "imperative $\epsilon\upsilon\alpha$ " in the New Testament, and an imperative in a fourth-century papyrus,²⁵ though none of these is a direct discourse $\delta\tau\iota$ introducing a command. The "hortatory subjunctive" in Rom 3:8 is functioning simultaneously within two different syntactical constructions. It is first of all asked as a rhetorical question introduced by $\mu\eta$ (parallel to v. 5), but it also relates to the parenthetical statement which Paul inserts between $\mu\eta$

and the subjunctive (. . . καθὼς φασὶν τινες ἡμᾶς λέγειν ὅτι). Whatever the role of ὅτι is in the relationship between the parenthetical clause and the rhetorical hortatory subjunctive, it has more to do with the style of Pauline parentheses than it does with the ὅτι-embeds. Likewise, the "imperative ἴνα" in Mk 12:19 is involved in a complex construction. It is part of a modified Septuagintal quote, preceded by a compound conditional clause, with ὅτι as part of the formula introducing the scriptural quote. Thus this is less an example of an imperative ὅτι-embed than it is of a Marcan introduction of Scripture. Finally, there is an imperative as a ὅτι-embed in P Oxy 1683.20, a "late fourth-century" "very illiterate letter."²⁶ The letter writer does use ὅτι (ὥτι) before an imperative form, but he is explicitly repeating an earlier conversation and therefore using ὅτι in the Johannine style with repeated discourse, though without the Johannine restrictions which delete this ὅτι with imperatives and within another +COMP embed. However, this same author ("illiterate" for his phonetic spelling) elsewhere deletes ὅτι before an imperative when it gives the content of a "cognition" verb, but uses it to embed a declarative with such a verb,²⁷ reflecting a careful nominalizing use of ὅτι, which includes deletion with imperative, but not with repeated discourse.

Another cause for deleting ὅτι within direct discourse is when the embed is a question. Again we will briefly look at the counter-examples and the problems involved with each. The two primary examples are Mk 4:21 and 8:4. The manuscript evidence for reading ὅτι in each passage is limited, respectively, to B L 892 and B L Δ, all from the same (Alexandrian) text-type. Since the Nestle editions are based largely on Codex B, they print ὅτι in both these passages.²⁸ We have noted that ὅτι before direct discourse tends to be unstable in scribal hands,²⁹ so with the evidence limited here to one text-type, it is quite possible that we have two more instances of a scribal addition of "optional quotation marks," and not a case for direct discourse ὅτι before questions. Blass Debrunner cites: Rom 10:15 P⁴⁶ γέγραπται ὅτι πῶς. . . .³⁰ A close examination of the manuscript, however, indicates that the reading is ὅτι ὡς.³¹ Since the ὡς is part of the scriptural quotation, and is exclamatory, we have another instance of scribal addition of ὅτι with direct quotation and not a direct question at all. Therefore we conclude that ὅτι is deleted in direct discourse when the embed is a direct question, as well as when it is a direct command. Whatever the stylistic rule may be for an author's use of ὅτι in direct discourse, it does not include using it with commands and questions. Thus the use of ὅτι in direct discourse is the same as it is with any nominalization:

ὅτι is the +COMP which embeds a declarative sentence into an NP which functions either adverbially in a "cognition" VP or appositively to a "cognition" NP.

Non-declarative sentences (commands and questions) are embedded by means other than ὅτι. We will look next at ἵνα, the second most common nominalizing complementizer in HG. Here are New Testament examples of its nominalizing use:

- (8) (a) Mk 6:8 παρήγγειλεν αὐτοῖς ἵνα μηδὲν αἴρωσιν
He ordered them not to take anything
(b) Lk 10:40 εἰπὼν αὐτῇ ἵνα μοι συναντιλάβηται
Tell her to help me
(c) I Cor. 16:12 παρεκάλεσα αὐτὸν ἵνα ἔλθῃ πρὸς ὑμᾶς
I urged him to visit you
(d) Mt 27:32 τοῦτον ἠγγάρευσαν ἵνα ἄρῃ τὸν σταυρὸν
They forced this man to carry the cross
- (9) (a) Jn 11:50 συμφέρει ὑμῖν ἵνα εἷς ἄνθρωπος ἀποθάνῃ
ὕπὲρ τοῦ λαοῦ
It is advantageous for you that one person should die for the people
(b) Mt 10:25 ἀρκετὸν τῷ μαθητῇ ἵνα γένηται ὡς ὁ διδάσκαλος αὐτοῦ
It is enough for the student to be like his teacher
- (10) (a) Jn 13:34 ἐντολὴν καινὴν δίδωμι ὑμῖν ἵνα ἀγαπᾶτε ἀλλήλους
I give you a new commandment: love one another

(b) Ac 27:42 τῶν στρατιωτῶν βουλὴ ἐγένετο ἵνα τοὺς
δεσμώτας ἀποκτείνωσιν

The soldiers' plan was to kill the prisoners

The patterns of sentences in (8), (9) and (10) are very analogous to (4), (5) and (6), i.e., we are working with the same sets of phrase markers, so we will analyze *ἵνα*-embeds in terms similar to the *ὅτι*-embeds. Each *ἵνα*-embed in (8) is a nominalization embedded into an NP which is functioning adverbially in a VP that has a certain type of matrix verb. We called the verb-class in (4) "cognition" verbs. In (8) the verbs are again all of one class: order, tell, urge, compel (and this list could also be expanded: e.g., command, request, proclaim).³² We will call them verbs of "exhortation." They are the class of verbs marked in the lexicon for the selectional feature (L_3):

(L_3): [$+$ ___ [$COMP$ *ἵνα*] [S]].

This suggests that the transformation involved is simply $+COMP \rightarrow \textit{ἵνα}$. However, we saw with *ὅτι*-embeds that the *S* embedded by the *ὅτι* is always declarative, so we must next consider the type of *S* which is embedded by *ἵνα*.

Compare (8a) with (8a'):

(8) (a) Mk 6:8 παρήγγειλεν αὐτοῖς [$\bar{S}$ [$COMP$ *ἵνα*] [S *μηδὲν*
αἶρωσιν]]

(a') Lk 9:3 εἶπεν πρὸς αὐτοὺς [S *μηδὲν*
αἶρετε]

In (8a) the S has a verb marked for subjunctive and in the third person. In (8a') Luke has put the same sentence into direct discourse as a command, with the verb marked for imperative and in the second person. The sentence underlying the S in (8a') is thus the same sentence underlying the S in (8a). The change in the verb form from second person to third person is part of the change from direct to indirect discourse, as with the declarative embed in (7a). There is another change here, however, from imperative form to subjunctive form, that indicates the presence of an additional feature marking in the embed. The additional marking is best explained as a modal marking, a feature of the AUX (Auxiliary) node,³³ indicated in (1a) by [AUX].

A sentence in imperative form results from the transformation of a deep structure with a modal marking for *Command*, the strongest modality of VOLITION. When the S with the *Command* marking is an embed, that feature marking in its AUX node affects the embedding transformation in two ways: 1) the choice of +COMP can no longer be $\delta_{\tau\tau}$, but must be a "modal" COMP, which is primarily $\bar{\nu}\alpha$, and 2) the embedded verbal form is marked for subjunctive. Thus the choice of the $\bar{\nu}\alpha$ -subjunctive construction as a nominalization is explained as the transformation of the *Command* marking in the embedded S. We already saw above that such a nominalized $\bar{S}$ functions adverb-

ially in a VP that has an "exhortation" verb, and now we can characterize that embed as the "content" of the exhortation. This is the common feature of all the sentences in (8).

The sentences in (9) have a nominalized embed functioning as the dominant NP. Like the sentences in (5), these are constructions which have a matrix VP with a lexical stem that has the "impersonal" selectional feature (L_2), i.e., συμφέρει with ἵνα is analogous to μέλει with $\delta\tau\iota$, and like δηλ-, the stem ἀρκ- can be used in impersonal constructions either as a verb (ἀρκεῖ, see Jn 14:8, without an embed, but conjoined to an imperative) or as an adjective, as in (9b). The difference between (9) and (5) is that the embedded sentences in (9) have a modal marking for VOLITION and therefore are embedded by +COMP $\rightarrow$ ἵνα , with the embedded verb marked for subjunctive. However, it is less obvious than in (8) what the gradient of the modal marking is. In (9a):

(9) (a) Jn 11:50 συμφέρει ὑμῖν [$\bar{s}$ [COMP ἵνα][$\bar{s}$ εἶς ἀποθάνῃ]
the S has a verb marked for a modality that is usually translated into English as "should," and could be paraphrased as "ought to," which are both degrees of VOLITION. However, in the following verse John explains to the reader that the speaker of (9a) was prophesying that Jesus ἐμελλεν ἀποθνήσκειν, suggesting that the modal marking of S in (9a) is now transformed into μέλλω, which is usually an aspectual marking

("about to"). John uses it again with ἀποθνήσκειν in 12:33 (and 18:32), which in turn is interpreted in the next verse as δεῖ, a modal marking of strong POSSIBILITY, which seems to be the Johannine mode in all these references to Jesus' death. Thus it is not possible to claim the same special modal marking for all ἵνα-embeds. Since there is no scholarly consensus on what the categories of modality are,³⁴ it is best to use a more general label like "strong modal" to cover all cases of nominalized embeds that use ἵνα for +COMP.

The sentences in (10) have ἵνα-embeds as appositives to matrix NPs. The lexical stem involved in each matrix has the same "exhortation" feature marking as the matrix verbs in (8). (See Jn 11:53; 12:10; 15:17.) This is analogous to the pattern we saw in the lexical stems of (4) and (6), i.e., whether the nominalizations function adverbially or appositionally, if they are ἵνα-embeds, they have a "strong modal" marking and they are embedded into an "exhortation" context.

Closely associated with the ἵνα-subjunctive construction is ὅπως-subjunctive. Compare (11a) and (11b):

- (11) (a) Lk 11:37 ἐρωτᾷ αὐτὸν φαρισαῖος ὅπως ἀριστήσῃ παρ' αὐτοῦ

A Pharisee asked him to dine with him.

- (b) Lk 7:36 ἡρώτα τις αὐτὸν τῶν φαρισαίων ἵνα φάγῃ μετ' αὐτοῦ

One of the Pharisees asked him to eat with him

As in (11a) the few other examples of $\delta\pi\omega\varsigma$ as a nominalizing COMP are also with verbs of "asking" and found mostly in Luke-Acts (Lk 7:3; 10:2; Ac 8:15,24; 23:20; 25:3; elsewhere in Mt 8:34; 9:38; Jas 5:16). It appears to be a relic of Attic that is losing its currency because $\iota\nu\alpha$ is becoming the standard COMP for modal embeds. It may be that $\delta\pi\omega\varsigma$ was originally the COMP for embeds with a modal marking "less strong" than that of the $\iota\nu\alpha$ -embeds (with verbs of "asking" rather than "exhorting"), but such a distinction was not maintained by most users of HG, with even Luke using $\iota\nu\alpha$ in (11b) as a stylistic variation of $\delta\pi\omega\varsigma$ in (11a). This was part of the process that gained such a stronghold for $\iota\nu\alpha$ as the dominant "modal" COMP in HG.³⁵ We conclude, therefore, that nominalizing transformation for $\iota\nu\alpha$ must indicate that it is contextually restricted to the presence of a modal marking (+M) in the embed, which we formulate as T_2 :

$$(T_2) T_{\text{NOM}}: +\text{COMP} \longrightarrow \iota\nu\alpha / +M.$$

This is the T_{NOM} used primarily for embedding "strong modals" into "exhortation" VPs. Among the "exhortation" verbs are verbs of "asking" with the sense of "requesting," especially $\epsilon\rho\omega\tau\acute{\epsilon}\omega$, as in (11b). However, when a VP has a verb of "asking" with the sense of "questioning," and the embed is an embedded (indirect) question, the verb is in a different verb-class than "exhortation" and the nominalization is also different.

bedding, COMP is already filled, so any additional transformation is blocked.

In (13) are two examples further indicating the analogous position of Π -embeds to $\delta\tau\iota$ -embeds. (13a) has the Π -embed functioning as the subject of an "impersonal" passive construction, exactly parallel to (5c),³⁷ and (13b) is an instance of "raising" the deep structure pronominal "subject" (second person singular) into the position of an adverbial NP in the matrix VP, exactly parallel to (6e).³⁸

This evidence suggests that the only distinction between $\delta\tau\iota$ -embeds and Π -embeds is that the latter are embedded sentences that have Q markers, necessitating the application of T_Q *before* the embedding transformation and therefore blocking any other realization of +COMP. All other features of these two sets of embeds are the same. Thus we cannot really talk about a separate nominalizing transformation for "questions." Rather, these are "indicatives" like $\delta\tau\iota$ -embeds, but with Q markers, in contrast to $\iota\nu\alpha$ -embeds as "non-indicatives."³⁹

Two other matters related to embedded questions can be mentioned only briefly. The first is the use of certain adnominal embeds which appear to be very similar to Π -embeds.⁴⁰ Compare (14a) and (14b):

- (14) (a) Mk 4:24 βλέπετε [$\overset{NP}{S}$ τί ἀκούετε]
Heed what you hear

- (b) Mt 11:4 ἀπαγγείλατε [_{NP} ΔΝ [_S^A ἀκούετε]
Report what you hear

In (14a) the $\bar{S}$ is an embedded question as in (12). However, the $\bar{S}$ in (14b) is an adnominal embedded by a relative complementizer (δ) into an NP which has a deleted (lexically empty) noun, sometimes called a "headless relative clause." Thus the transformation involved in (14b) is an adnominalization and not a nominalization, and we are not considering such constructions in our study. It is important to note that Greek distinguishes between these two types of embedding devices: Π -words moved into COMP position and δ -words⁴¹ as complementizers, whereas both are WH-words in English.⁴²

The second matter has to do with embedding other kinds of questions. Questions involving Π -words are only one type of question transformation. The other type is the Yes/No, or non- Π -word, question, i.e., a Q marker when there is no Π -word, as in (15a):

- (15) (a) Mk 15:2 ἐπηρώτησεν αὐτὸν ὁ Πιλάτος, σὺ εἶ ὁ
βασιλεὺς τῶν Ἰουδαίων;
Pilate asked him, "Are you the king
of the Jews?"

and therefore there is no word to be "fronted." Consequently, the transformation does not alter the position of any element in S, so only the speaker's intonation indicates the presence of the Q marker. When such a Yes/No question is an embed, as in (15b):

- (15) (b) Mk 15:44 ἐπηρώτησεν αὐτὸν εἰ πάλαι ἀπέθανεν
He asked him if he had already died

it has a complementizer (εἰ) which is neither a Π-word nor a δ-word.⁴³ The εἰ-Comp also occurs in direct questions, as in (15c):

- (15) (c) Ac 5:8 εἰπέ μοι, εἰ τοσούτου τὸ χωρίον ἀπέδοσθε;
ἡ δὲ εἶπεν, ναί, τοσούτου.
Tell me: did you sell the land for so much?
She said, "Yes, for so much."

The fact that the εἰ construction in (15c) is responded to with a direct affirmative answer suggests that it is a direct Yes/No question. Indeed, most of the "indirect" εἰ questions in the New Testament appear to fit this category.

As part of the Yes/No transformation the εἰ in (15c) functions to provide the Yes/No "fronting" which is lacking in (15a).⁴⁴ This is analogous to question transformations which are marked for their expected answer by "fronting" with οὐ when expecting "Yes" and by μή when expecting "No," as in (15d):

- (15) (d) Jn 7:41-2 οἱ δὲ ἔλεγον, μὴ ἐκ τῆς Γαλιλαίας ὁ
χριστὸς ἔρχεται; οὐχ ἡ γραφὴ εἶπεν
. . . ἀπὸ Βηθλέεμ . . . ;
Some said, "The Messiah doesn't come
from Galilee, does he? Doesn't Scrip-
ture say . . . from Bethlehem . . . ?

Questions with οὐ- and μή-marked answers are not used as em-

beds in the New Testament, i.e., there are no $\epsilon\iota$ $\omicron\upsilon$ or $\epsilon\iota$ $\mu\eta$ embedded questions, though there are few extant examples elsewhere.⁴⁵

We have been considering the +COMP embedding transformations in HG. We can summarize them by the association of Comp with type of embedded sentence: 1) with indicative modal marking either a) +COMP is $\delta\tau\iota$, or b) the indicative has a Q marker, which either i) moves a Π -word into COMP position, blocking the +COMP transformation, or ii) the Q marker is realized as $\epsilon\iota$ and fronted like a question word, again blocking +COMP; 2) with non-indicative modal marking +COMP is $\iota\upsilon\alpha$ and the modal marking is realized as the subjunctive form of the embedded verb.

We formulated the embedding rule (1g') as

$$(1) (g') \bar{S} \longrightarrow \pm\text{COMP } S$$

and we have seen the several realizations of +COMP when $\bar{S}$ is a nominalization. We will now consider the -COMP realizations of nominalizing transformations. The only frequent -COMP nominalization is that which results in the infinitive form of the embedded verb. The infinitive embed (Inf-embed) is used in the following nominalizations:

- (16) (a) Jn 12:18 $\delta\tau\iota$ $\acute{\eta}\kappa\omicron\upsilon\sigma\sigma\alpha\nu$ [$\overset{\text{NP}}{\bar{S}}$ τοῦτο αὐτὸν πεποιημέναι]
 Because they heard (that) he had done
 this

- (b) Lk 4:41 $\delta\tau\iota$ $\eta\delta\epsilon\iota\sigma\alpha\nu$ [$\overset{NP}{\bar{S}}$ $\tau\acute{o}\nu$ $\chi\rho\iota\sigma\tau\acute{o}\nu$ $\alpha\upsilon\tau\acute{o}\nu$ $\epsilon\lambda\iota\nu\alpha\iota$]
 Because they knew (that) he was the Mes-
 siah
- (c) Ac 12:9 $\epsilon\delta\delta\kappa\epsilon\iota$ [$\overset{NP}{\bar{S}}$ $\delta\rho\alpha\mu\alpha$ $\beta\lambda\acute{\epsilon}\pi\epsilon\iota\nu$]
 He thought (that) he was seeing a vision
- (d) Ac 15:11 $\pi\iota\sigma\tau\epsilon\upsilon\sigma\omicron\mu\epsilon\nu$ [$\overset{NP}{\bar{S}}$ $\sigma\omega\theta\eta\kappa\alpha\iota$]
 We believe (that) we are saved
- (e) Lk 20:6 $\kappa\epsilon\kappa\epsilon\iota\sigma\mu\acute{\epsilon}\nu\omicron\varsigma$ $\acute{\epsilon}\sigma\tau\iota\nu$ [$\overset{NP}{\bar{S}}$ Ἰωάννην προφήτην
 $\epsilon\lambda\iota\nu\alpha\iota$]
 They are convinced (that) John is a prophet

The matrix verbs in (16) are all the same "cognition" verbs⁴⁶ that we saw in (3)-(4) with $\delta\tau\iota$ -embeds, and the $\bar{S}$ in each case has the same syntactical function as the corresponding $\bar{S}$ in (3)-(4). This suggests that the Inf-embed is the -COMP equivalent to the $\delta\tau\iota$ -embed as a +COMP transformation, i.e., the two appropriate realizations of $\pm$ COMP S. Then the choice between +COMP AND -COMP in this situation is not contingent upon any deep structure feature, but is rather a choice made in a later cycle as part of the embedding transformation. We will call it a "stylistic" choice.

Stylistic choices are made for a variety of reasons. In (16a) and (16b) the VP into which $\bar{S}$ is embedded is itself part of a (causal) $\delta\tau\iota$ -embed, suggesting that Inf was chosen to avoid using $\delta\tau\iota$ again. Stylistic choices are often also a reflection of an author's preference, e.g., (16b-e) are all from Luke-Acts, with (16b) a Lucan addition to Mark and (16e) parallel to a $\delta\tau\iota$ -embed in Mk 11:32.⁴⁷

Inf-embeds are also used with "saying" verbs:

- (17) (a) Mk 12:18 λέγουσιν [$\bar{S}$ ^{NP} ἀνδράσιν μὴ εἶναι]
 They say (that) there is no resurrection
 (b) Jn 12:29 ἔλεγεν [$\bar{S}$ ^{NP} βροντῇν γεγονέναι]
 They said (that) it had thundered

Each $\bar{S}$ in (17) is an indicative S that could have been transformed also into a $\delta\tau\iota$ -embed, analogous to (7a).

A more common pattern, however, is the use of Inf-embeds with "exhortation" verbs:

- (18) (a) Lk 8:56 παρήγγειλεν αὐτοῖς [$\bar{S}$ ^{NP} μηδενὶ εἰπεῖν]
 He ordered them not to tell anyone
 (b) Lk 12:13 εἰπὲ τῷ ἀδελφῷ μου [$\bar{S}$ ^{NP} μερίσασθαι]
 Tell my brother to share
 (c) 2 Cor 2:8 παρακαλῶ ὑμᾶς [$\bar{S}$ ^{NP} κυρῶσαι . . . ἀγάπην]
 I urge you to reaffirm . . . your love
 (d) Lk 8:38 ἐδεῖτο αὐτοῦ . . . [$\bar{S}$ ^{NP} εἶναι σὺν αὐτῷ]
 He begged him . . . to be with him

The sentences in (18a-c) are exactly parallel to (8a-c), with the same matrix verbs, each with an $\bar{S}$ giving the "content" of the exhortation,⁴⁸ but in (8) each $\bar{S}$ was a $\iota\upsilon\alpha$ -embed with a subjunctive verb form. We concluded that these constructions were transformations of modal markings in the $\bar{S}$, which we labeled "strong" VOLITION. This holds true for (18) also. (18a) is Luke's parallel to the $\iota\upsilon\alpha$ in Mk 5:43, as is Lk 9:21 to Mk 8:30 and the Inf-embeds with παραγγέλλω in Lk 5:14 and 8:29 are parallel to imperatives in Mark. In fact, Luke al-

ways uses Inf-embeds with this verb (another ten times in Acts), a clear "stylistic" preference for infinitive over $\text{\textit{\iota}\nu\alpha}$ -embeds.

In (18d) Luke has a "request" verb with Inf-embed, parallel to his "request" verbs in (11) with $\delta\pi\omega\varsigma$ and $\text{\textit{\iota}\nu\alpha}$. Luke uses $\delta\epsilon\omicron\mu\alpha\iota$ with all three (Inf:Lk 9:38; Ac 26:3; $\delta\pi\omega\varsigma$:Lk 10:2; Ac 8:24; $\text{\textit{\iota}\nu\alpha}$:Lk 9:40; 22:32; Ac 21:36; in addition to four times with direct discourse). Thus Inf is a "stylistic" choice in place of $\delta\pi\omega\varsigma$ -subjunctive, as well as in place of $\text{\textit{\iota}\nu\alpha}$ -subjunctive. The difference between choosing a -COMP (Inf) and a +COMP ($\text{\textit{\iota}\nu\alpha}$) transformation, is that the "strong" modal marking in $\bar{S}$ is transformed with +COMP into a subjunctive marking on the embedded verb, but when -COMP transforms the verb into a "moodless" infinitive form, no subjunctive marking is possible, so apparently the modal marking of the embed is lost. However, the matrix verb is an "exhortation" verb, which itself has "strong" volitional features in its lexical "meaning," suggesting that once the modality of the sentence is marked, a second occurrence of the same marking is deletable, since the "meaning" of the sentence (however its "semantic representation"⁴⁹ is determined and formalized) is unaffected.

The Inf-embeds in (16)-(18) have covered all the categories of nominalizations functioning adverbially that we

looked at as +COMP embeds. The other two categories we considered were "subject" nominalizations and appositives. The infinitive transformation (T_{INF}) is also used with such constructions:

- (19) (a) Jn 18:14 συμφέρει [$\overset{NP}{\bar{S}}$ ἓνα ἄνθρωπον ἀποθανεῖν ὑπὲρ τοῦ λαοῦ]

It is advantageous for one person to die
on behalf of the people

- (b) Mt 3:15 πρέπον ἐστὶν ἡμῖν [$\overset{NP}{\bar{S}}$ πληρῶσαι πᾶσαν δικαιοσύνην]

It is fitting for us to fulfill all right-
eousness

- (c) Mt 15:20 [$\overset{NP}{\bar{S}}$ τὸ ἀνύπτους χερσὶν φαγεῖν] οὐ κοινοῖ τὸν ἄνθρωπον

To eat with unwashed hands does not defile
a person

- (d) Jas 1:27 ὁρησκεῖα καθαρά . . . αὕτη ἐστὶν [$\overset{NP}{\bar{S}}$ ἐπισκέπτεσθαι ὀρφανοὺς]

Pure religion . . . is this:
to visit orphans. . . .

The constructions in (19a-b) are analogous to the "impersonal" $\bar{I}\nu\alpha$ -embeds in (9a-b). In fact, (19a) is a repeat of the earlier direct statement in (9a). In our discussion of (9a) we concluded that its $\bar{S}$ was marked for "strong modal," and suggested that in John that would more likely be a "strong" POSSIBILITY marking than a "strong" VOLITION marking. If (19a) is a stylistic variation of (9a), we again have the loss of the modal marking, as in (18). There we suggested

that the matrix verb had a "strong modal" feature as part of its lexical "meaning," making the embedded modal marking deletable. If that applies to this "impersonal" construction, it would suggest that verbs like *συμφέρει* are semantically marked for "modality," and therefore likely candidates to become "modal verbs." This could well be the original of *δεῖ* ("it is needful/necessary" = "must") as the modal transformation for *Necessity*, e.g., Mt 24:6 *δεῖ γενέσθαι*, "this must happen." Thus *συμφέρει* is also beginning to function the same way,⁵⁰ e.g., Mt 19:10 *οὐ συμφέρει γαμῆσαι*, "he should not marry." Likewise, in (19b) *πρέπον* is from a lexical stem with similar "modal" features, i.e., *πρέπει* is on its way to becoming the Modern Greek modal for "must," having largely replaced *δεῖ* in that capacity.

The Inf-embed in (19c) is also functioning as a dominant NP, but in a matrix S that is not an "impersonal" construction. In (19d) the Inf-embed is a nominalization in apposition to a demonstrative determiner, as are the *ὅτι*-embeds in (6c-d), but we saw there that the dominant stem in the matrix construction was a member of the "cognition" verb class that was characteristic of *ὅτι*-embeds. Here the dominant stem (*θρησκειά*) is not a member of such a lexical class. Thus (19c) and (19d) indicate that the Inf-embed is used in nominalizations that function in constructions not limited to the

"cognition" and "exhortation" categories of the $\delta\tau\iota$ - and $\iota\nu\alpha$ -embeds, respectively.

The pattern that has emerged here for the infinitive as a nominalization is 1) it is an equivalent transformation to $\delta\tau\iota$ for embedding $\tilde{S}$ into "cognition" phrases; 2) it is an equivalent transformation to $\iota\nu\alpha$ for embedding $\tilde{S}$ into "exhortation" phrases; and 3) it is used to embed $\tilde{S}$ into other unrestricted phrases. The infinitive is therefore the most freely applied nominalizing transformation. It is the only nominalization that can be chosen for all three categories, and thus it does not have a characteristic trait corresponding to the (+COMP) $\delta\tau\iota$ and $\iota\nu\alpha$ transformations. As a -COMP transformation, it is lacking a complementizer, the most obvious feature of +COMP. Furthermore, lacking a Comp, its embedding device is the "moodless" infinitive form, which blocks any additional modal marking, depriving Inf of yet another distinctive +COMP feature.

SUMMARY AND CONCLUSIONS

In our first chapter we looked at the study of Hellenistic Greek grammar during the past two centuries. All the standard grammars of the modern era have been written during that period. That was also a period of several momentous revolutions in linguistic theory. Each new understanding of the nature of language and how to study it was eventually applied to Hellenistic Greek. However, a significant new development had each time out-dated the results just as they were beginning to gain currency, and the "lag-time" in the twentieth century has increased even more.

Beginning with Winer, the first major New Testament Greek grammar, we noticed its strong rationalist emphasis and its understanding of the living, spoken language of the New Testament. The comparative philologists were quick to set aside "rational grammar" for the study of the historical progression of morphology in related languages. As the methodology of nineteenth century historical-comparative linguistics was being applied to the study of HG grammar by the scholars whose works are still standard today, that very approach was replaced with the structuralist linguistics which dominated the first

half of this century. Before any lasting structuralist work was done on HG grammar, however, the discipline of linguistics was completely redefined by Noam Chomsky's theory of transformational-generative grammar. TG linguistics has significantly revolutionized the understanding, study and teaching of language, as well as influenced various other fields. Of the few areas that have remained relatively untouched by this revolution, two of the more noticeable are classics and biblical studies, which share Greek grammar in common. This study has endeavored to begin correcting that.

The second chapter presented the basic development of Chomsky's TG linguistic theory, beginning with its outgrowth from structuralism. We then outlined the issues that gave rise to the "extended standard theory" and in particular to the interpretive and lexicalist positions, as presuppositions for our own investigation of nominalizations. We also considered some of the more recent TG discussions that are pertinent to the understanding of nominalizing transformations, especially the theory of complementation, the formulation of embedding rules and the conditions on transformations.

In the third chapter we applied this TG understanding of syntax to a study of nominalizing transformations in Hellenistic Greek. We formulated the basic embedding rule as (1g'), repeated here as (20a):

(20) (a) $\tilde{S} \rightarrow \pm\text{COMP } S$.

We began with +COMP embeds and saw that there are basically two realizations of +COMP in nominalizations, which we can formulate as (20b-c):

(20) (b) $+ \text{COMP} \rightarrow \left\{ \begin{array}{l} \delta\tau\iota / -M \\ \iota\nu\alpha / +M \end{array} \right\}$
 (c)

i.e., $\delta\tau\iota$ in the context of indicative modal marking (-M), and $\iota\nu\alpha$ with non-indicative (+M) (which also undergoes a further, modal transformation into a subjunctive verb form). We also noted that each of these is limited to certain matrix contexts, i.e., (20b) into a matrix phrase marked for the lexical feature "cognition," and (20c) marked for "exhortation."

The primary alternative nominalizing transformation is (20d):

(20) (d) $- \text{COMP} \rightarrow \text{Inf}$

i.e., the transformation is realized as the "moodless" infinitive form of the verb. While (20d) can be used as an option for either (20b) or (20c) it is not limited to such a feature marking in the matrix phrase. We suggested that the choice between such options is properly the area of "stylistics."

In the course of our analysis we noted that embedded questions are a sub-set of (20b), where $\tilde{S}$ has a Q marker, which when transformed blocks $\delta\tau\iota$. We saw that $\delta\pi\omega\varsigma$ was a

sub-set of (20c), used for a limited area of "exhortation." (20b-d) are also used as the "subject" embeds for certain "impersonal" constructions, and we suggested that the "impersonal verbs" which use (20d) for embedding may, in fact, explain the origin of "modal verbs."

This analysis of nominalizations has opened up various areas which need further investigation. The understanding of "style" as related to the pattern of transformational choices has direct bearing on how "style" is used as evidence for many critical methodologies. For example, it has affected our approach to textual criticism (pp. 81, 86); it has influenced the translations of our example sentences throughout the last chapter (see also n. 21); it has provided a way to discern a pattern in an author's writing style (pp. 83, 98). There are also many other areas where "linguistic evidence" is cited as a criterion for making evaluations regarding texts, sources, forms, authorship,¹ interpretation, and more fundamentally, the very understanding of the nature of human language. Wherever this applies to material written in Hellenistic Greek, we have offered an indication of how transformational-generative grammar can further that understanding.

NOTES - INTRODUCTION

¹Lars Rydbeck, "What Happened to New Testament Greek Grammar after Albert Debrunner?" *New Testament Studies* 21 (1975) 424-27.

²For a more popular treatment of many of the issues discussed in that chapter see Noam Chomsky, *Language and Responsibility*. Based on conversations with Mitsou Ronat. Translated from the French by John Viertel (New York: Pantheon, 1979).

NOTES - CHAPTER ONE

¹This view is championed by Noam Chomsky, especially in *Cartesian Linguistics* (New York: Harper and Row, 1966) and *Language and Mind* (New York: Harcourt, Brace and World, 1968).

²First published in 1660 and now in reprint: *Grammaire Générale et Raisonnée*, ou La Grammaire du Port-Royal, by Claude Lancelot and Antoine Arnauld, ed. Herbert H. Brekle (Stuttgart-Bad Canstatt: Friedrich Frommann, 1966). For a lengthy review of the Brekle edition see Robin Lakoff (*Language* 45 [1969] 343-64), who argues that its philosophical basis precedes Descartes, and in fact is motivated by the work on Latin of the 16th century Spaniard, Sanctius. A new English translation, based on Brekle's edition, has recently been published: *General and Rational Grammar: The Port-Royal Grammar*, eds. Jacques Rieux and Bernard E. Rollin (The Hague: Mouton, 1975), with preface, introduction and critical essay which give helpful historical information and discuss Chomsky's Cartesian evaluation of the Grammar.

³Gottfried Hermann, *De emendanda ratione Graecae grammaticae* (Leipsig: Gerhard Fleischer, 1801).

⁴George B. Winer, *Grammatik des neutestamentlichen Sprachidioms* (Leipsig: Vogel, 1822). Winer produced six editions by the 1850's, after which Gottlieb Lünemann enlarged it for a seventh edition in 1867. Editions 1, 4, 6, and 7

were translated into English. The sixth edition (1855, Winer's last) was translated initially by Edward Masson, *A Grammar of the New Testament Diction* (Edinburgh: T. & T. Clark, 1859¹; 1863⁴) and then revised by William F. Moulton, *A Treatise on the Grammar of New Testament Greek* (Edinburgh: T. & T. Clark, 1870¹; 1882³), incorporating the material left by Winer. This last edition will be cited as Winer-Moulton. An American revision of Masson was also made, based on the seventh edition of Lünemann, translated by J. Henry Thayer, *A Grammar of the Idiom of the New Testament* (Andover: Warren Draper, 1869). A new (eighth edition) German revision was begun, but never finished, by Paul Schmiedel (Göttingen: Vandenhoeck & Ruprecht, 1894-98).

⁵Winer was aware of only one New Testament Greek grammar earlier than his: "George Pasor [d. 1637] . . . left amongst his papers a N.T. Grammar, which was published with some additions and corrections of his own, by his son Matthias Pasor . . . under the title *G. Pasoris Grammatica Graeca Sacra N.T. in tres libros distributa* (Groning. 1655, pp. 787). This work is now a literary rarity . . ." (Winer-Moulton, 5).

⁶See the discussion in the references in n. 1 and n. 2.

⁷Winer-Moulton, xxi.

⁸Ibid., 1-3.

⁹Ibid., 7-9.

¹⁰Ibid., 20-21.

¹¹His detailed investigations on the Egyptian Greek papyri are brought together in Adolf Deissmann, *Light from the Ancient East*, tr. by L. R. M. Strachan (New York: George H. Doran, 1910; reprinted, Grand Rapids: Baker, 1978).

¹²Franz Bopp, *Ueber das Konjugationssystem der Sanskritsprache* (Frankfurt-am-Main, 1816), later developed into a complete *Vergleichende Grammatik* (1833-1852).

¹³Friedrich Blass, *Grammatik des neutestamentlichen Griechisch* (Göttingen: Vandenhoeck & Ruprecht, 1896); *Grammar of New Testament Greek*, tr. by Henry St. John Thackeray (London: Macmillan, 1898).

¹⁴Ibid., 1.

¹⁵Although not to the same extent as by Alexander Buttmann, whose New Testament grammar originated as an appendix to his father's classical Greek Grammar, but was translated as a separate volume (intending to be more concise than Wiener). See Alexander Buttmann, *A Grammar of the New Testament Greek*, tr. J. Henry Thayer (Andover: Warren Draper, 1873).

¹⁶It is interesting to note that already in his first edition, Blass expressed disinterest in the direction which linguistics was taking. In his preface (untranslated by Thackeray "on account of the somewhat personal character given to it," [See n. 13]), Blass explained to his mentor that because of his attachment to classical "philology" [*Philologie*], he was not able to follow the direction taken by comparative "linguistics" [*Sprachforschung*, usually also called "philology"]. This distinction is indicative of the attitude of classical philologists to the new course set for comparative philology in the 1870's by the *Junggrammatiker* ("neo-grammarians"), who focused on the detailed changes in phonology and morphology in Indo-European languages. The nature of the debate is beyond the scope of our study, but it is summarized in most introductory texts on linguistics, e.g., John Lyons, *Introduction to Theoretical Linguistics* (Cambridge: Cambridge University, 1968) 28-33.

¹⁷Friedrich Blass and Albert Debrunner, *A Greek Grammar of the New Testament and Other Early Christian Literature*, tr. Robert W. Funk (Chicago: University of Chicago, 1961).

¹⁸*Ibid.*, ix.

¹⁹Friedrich Blass and Albert Debrunner, *Grammatik des neutestamentlichen Griechisch*, ed. Friedrich Rehkopf (Göttingen: Vandenhoeck & Ruprecht, 1976).

²⁰James H. Moulton, *A Grammar of New Testament Greek*, vol. I: *Prolegomena* (Edinburgh: T. & T. Clark, 1906¹; 1908³), and most of the work for vol. II.

²¹James H. Moulton and Wilbert F. Howard, *A Grammar of New Testament Greek*, vol. II: *Accidence and Word-Formation* (Edinburgh: T. & T. Clark, 1929; parts i and ii were published in 1919 and 1920), hereafter cited as Moulton-Howard.

²²James H. Moulton, *A Grammar of New Testament Greek*, vol. III: *Syntax*, by Nigel Turner (Edinburgh: T. & T. Clark, 1963), hereafter cited as Moulton-Turner, *Syntax*. See Turner's preface, v.

²³James H. Moulton, *A Grammar of New Testament Greek*, vol. IV: *Style*, by Nigel Turner (Edinburgh: T. & T. Clark, 1976), hereafter cited as Moulton-Turner, *Style*.

²⁴Moulton, *Prolegomena*, x-xi.

²⁵*Ibid.*, 1-2.

²⁶*Ibid.*, 4.

²⁷*Ibid.*, 18-19. Moulton's commitment to this assertion is demonstrated in the other great project he began: James H. Moulton and George Milligan, *The Vocabulary of the Greek Testament Illustrated from the Papyri and Other Non-Literary Sources* (Grand Rapids: Eerdmans, 1930; reprinted 1974). Milligan's General Introduction discusses Moulton's support of Deissmann and the anticipations of that view in the 19th century. Milligan's primary example of "Deissmannism before Deissmann" is Masson's *Prolegomena* to his translation of Winer's *Grammar* (see no. 4), where Masson does indeed talk about the language of the New Testament as "unaffected Hellenic," but Milligan never mentions Winer's own position in that very volume (which we presented above)!

²⁸Moulton-Howard, vi-vii, 413-16.

²⁹Moulton-Turner, *Syntax*, 1.

³⁰*Ibid.*, 2-5.

³¹*Ibid.*, 9.

³²Moulton-Turner, *Style*, 2-3.

³³Moulton, *Prolegomena* xvi (in the "Note to the Third Edition," where he responded to "some leading critics of Deissmannism").

³⁴See above no. 25.

³⁵In the 1919 reprint of the third edition of vol. I, quoting James Hastings, editor of *Expository Times*, on the page facing the title page.

³⁶A. T. Robertson, *A Grammar of the Greek New Testament in the Light of Historical Research* (Nashville: Broadman, 1914¹; 1923⁴; reprinted, 1934).

³⁷ Ibid., vii.

³⁸ Ibid., 8.

³⁹ Karl Brugmann, *Griechische Grammatik*, Handbuch der Klassischen Altertums-Wissenschaft II. 1 (Munich: Beck, 1890²; 1913⁴, ed. Albert Thumb), the work of one of the "neo-grammarians" mentioned in n. 16.

⁴⁰ Robertson, *A Grammar of the Greek New Testament*, viii.

⁴¹ Ibid., 41. Note also the full title of the *Grammar*.

⁴² Ibid., 379.

⁴³ Ibid., xi.

⁴⁴ Ferdinand de Saussure, *Cours de Linguistique Générale*, eds. Charles Bally and Albert Sechehaye (Paris: Payot, 1916); English title: *Course in General Linguistics*, tr. Wade Baskin (New York: McGraw-Hill, 1959). For a discussion of de Saussure's impact see David Crystal, *Linguistics* (Baltimore: Penguin, 1971) 158-67, and Lyons, *Introduction to Theoretical Linguistics*, 38-52.

⁴⁵ Note the many similarities to Winer above.

⁴⁶ Leonard Bloomfield, *Language* (New York: Henry Holt, 1933).

⁴⁷ Franz Boas, ed., *Handbook of American Indian Languages* ("Smithsonian Institution: Bureau of American Ethnology," Bulletin 40; Washington: Govt. Printing Office, 1911-1938). Boas may be considered the founder of the "American school" of linguistics.

⁴⁸ Best typified in the work of Zellig Harris (see the discussion in the next chapter).

⁴⁹ Charles C. Fries, *The Structure of English: An Introduction to the Construction of English Sentences* (New York: Harcourt, Brace, 1952), a study of English syntax based on a corpus of recorded conversations.

⁵⁰ Paul Roberts, *Understanding Grammar* (New York: Harper & Row, 1954); *Patterns of English* (New York: Harcourt, Brace, 1956); *Understanding English* (New York: Harper & Row, 1958).

⁵¹Paul Roberts, *English Sentences* (New York: Harcourt, Brace & World, 1962), which was influenced somewhat by transformational-generative grammar; further developed in *English Syntax: A Book of Programmed Lessons; An Introduction to Transformational Grammar* (New York: Harcourt, Brace & World, 1964).

⁵²H. A. Gleason, *An Introduction to Descriptive Linguistics* (New York: Holt, Rinehart & Winston, 1961); *Linguistics and English Grammar* (New York: Holt, Rinehart & Winston, 1965), which contains several chapters of historical background, tracing the rise and development of descriptive linguistics and English grammar, and a rather extensive use of early transformational-generative grammar.

⁵³Robert Funk, *A Beginning - Intermediate Grammar of Hellenistic Greek* (Missoula, MT: SBL, 1973). Less significant is the pedagogical grammar of Eugene Van Ness Goetchius, *The Language of the New Testament* (New York: Scribners, 1965), who particularly followed Fries, in contrast to Funk's use of Gleason, though Funk followed Gleason only in part.

⁵⁴Funk, xxiv.

⁵⁵Ibid., xxviii.

⁵⁶Ibid., 14-15, 20.

⁵⁷John Searle, "Chomsky's Revolution in Linguistics," in *On Noam Chomsky: Critical Essays*, ed. Gilbert Harman (Garden City, N.Y.: Anchor, 1974) 3.

NOTES - CHAPTER TWO

¹For a realistic appraisal see John Searle, "Chomsky's Revolution in Linguistics."

²Noam Chomsky, *Syntactic Structures* (The Hague: Mouton, 1957), hereafter *Structures*, a classroom version of parts of a much longer work, "The Logical Structure of Linguistic Theory," MIT Library, 1955, (Mimeographed), which was not published until recently, various chapters of it having been revised, as *The Logical Structure of Linguistic Theory* (New York: Plenum, 1975), hereafter *Logical Structure*, with an Introduction, written in 1973, which gives Chomsky's own historical account of the development of his linguistic theory.

³The implications were just as important for philosophy and psychology. For a discussion of these matters see Justin Leiber, *Noam Chomsky: A Philosophical Overview* (Boston: G. K. Hall, 1975), who carefully reviews the background issues and the progression of Chomsky's own philosophical thought.

⁴Noam Chomsky, "Morphophonemics of Modern Hebrew" (M.A. thesis, University of Pennsylvania, 1951); "Transformation Analysis (Ph.D. dissertation, University of Pennsylvania, 1955). The latter became part of the longer work mentioned in n. 2.

⁵Zellig Harris, *Methods in Structural Linguistics* (Chicago: University of Chicago, 1951) 1. The preface is dated 1947. The paperback edition appeared in 1960 (also University of Chicago) with the shortened title *Structural Linguistics*, "methods" being out of vogue after 1957.

⁶*Ibid.*, 262.

⁷*Ibid.*, 271-72.

⁸*Ibid.*, 279; for "noun phrase" and "verb phrase" see 287, 291, 331. This example is given in anticipation of the generative model which will follow. Harris' major symbols are: T = Determiner, D = Adverb, A = Adjective, N = Noun, V = Verb, P = Preposition.

⁹Ibid., 363.

¹⁰Ibid., 367-75.

¹¹We have presented Harris' *Methods* in this much detail because it was the basis for Chomsky's original work in linguistics. In fact, as a student, he proofread Harris' *Methods* (Harris, *Methods*, v; Chomsky, *Logical Structure*, 25, where Chomsky begins the autobiographical sketch that includes his own evaluation of Harris' approach).

¹²Zellig Harris, "Discourse Analysis," *Language* 28 (1952) 1-30, reprinted in *The Structure of Language: Readings in the Philosophy of Language*, eds. Jerry Fodor and Jerrold J. Katz (Englewood Cliffs, N. J.: Prentice-Hall, 1964), 355-83.

¹³Ibid., 355.

¹⁴Ibid., 371.

¹⁵Ibid., 373.

¹⁶Ibid., 372.

¹⁷Zellig Harris, "Co-occurrence and Transformation in Linguistic Structure," *Language* 33 (1957) 283-340, also reprinted in Fodor and Katz, *The Structure of Language*, 155-210.

¹⁸Ibid., 162.

¹⁹Ibid., 167.

²⁰This comparison is made by Dell Hymes, in "Review of Noam Chomsky," *Language* 48 (1972) 416-27; reprinted in Harman, *On Noam Chomsky*, 316-32.

²¹Chomsky, *Structures*, 11.

²²Noam Chomsky, *Current Issues in Linguistic Theory* (The Hague: Mouton, 1964) 9; hereafter *Issues*.

²³*Structures*, 13.

²⁴See the discussion of "Simplicity and the Form of Grammars," *Logical Structure*, 113-28, and the clarification in Noam Chomsky, *Aspects of the Theory of Syntax* (Cambridge: MIT, 1965), hereafter *Aspects*, 37-8.

²⁵ *Structures*, 49-56.

²⁶ *Issues*, 28-30. For further discussion, see *Aspects*, 30-7.

²⁷ Noam Chomsky, *Topics in the Theory of Generative Grammar* (The Hague: Mouton, 1966), hereafter *Topics*, 22.

²⁸ Here we follow Chomsky, *Aspects*, 27-30.

²⁹ See Noam Chomsky, *Language and Mind* (New York: Harcourt Brace Jovanovich, 1968, enlarged edition 1972), and more recently, *Reflections on Language* (New York: Pantheon Books, 1975).

³⁰ *Aspects*, 27.

³¹ *Aspects*, 30-4. The relationship between linguistic theory and language acquisition is stated explicitly by Chomsky in *Logical Structure*, 9-13. For a popular survey of the study of language acquisition see Breyne Moskowitz, "The Acquisition of Language," *Scientific American* 239 (November, 1978) 92ff.

³² Leiber, *Noam Chomsky*, 54.

³³ Chomsky's popular writings deal only very summarily with his treatment of linguistic models, e.g., *Structures*, 18-33; *Aspects*, 13-15; *Issues*, 111-13. The detailed argumentation is in technical articles: the most basic is "Three Models for the Description of Language," hereafter "Three Models," *I. R. E. Transactions on Information Theory*, Vol. IT-2 (1956) 113-24, reprinted in *Readings in Mathematical Psychology II*, eds. R. Duncan Luce, Robert B. Bush and Eugene Galanter (New York: Wiley, 1956); various aspects of theoretical models are discussed in three articles in *Handbook of Mathematical Psychology II*, eds. Luce, Bush and Galanter (New York: Wiley, 1963), viz., two by Chomsky and George A. Miller, "Introduction to the Formal Analysis of Natural Languages," 269-321, and "Finitary Models of Language Users," 419-91; one by Chomsky, "Formal Properties of Grammars," 323-418. All three articles have bibliographies referring to even more technical literature. A more popularized exposition is Noam Chomsky, "Explanatory Models in Linguistics" in *Logic, Methodology and Philosophy of Science*, eds. Ernest Nagel, Patrick Suppes and Alfred Tarski (Stanford: Stanford University, 1962) 528-50. That same volume contains two brief summaries which focus on

models: Y. Bar-Hillel, "Some Recent Results in Theoretical Linguistics," 551-57, and Yuen Ren Chao, "Models in Linguistics and Models in General," 558-66.

³⁴Leiber, *Noam Chomsky*, 67; see entire section, 54-71.

³⁵See especially his "Formal Properties of Grammars" (n. 33).

³⁶See the brief historical mention in Bar-Hillel, "Some Recent Results...", 552, and Leiber, *Noam Chomsky*, 78; though in *Logical Structure*, 40, Chomsky disclaims having had any serious interest in the matter.

³⁷E.g., Charles Hockett, *A Manual of Phonology* (Baltimore: Waverly, 1955), suggested by Chomsky, *Structures*, 20.

³⁸Chomsky, "Three Models," 114-16. In "Formal Properties of Grammars" he outlines ways in which a digital computer can be made more "powerful," i.e., giving it more complex sets of instructions. However, to achieve even observational adequacy would involve processes which have not been proven possible for a finite state device.

³⁹Chomsky and Miller, "Finitary Models of Language Users," 470.

⁴⁰Chomsky, "Formal Properties of Grammars," 390.

⁴¹*Structures*, 18.

⁴²*Ibid.*, 26.

⁴³*Ibid.*, 111. The notational symbols are those given in Appendix I, except for Determiner, which is here "T."

⁴⁴Adapted from Howard Maclay, "Overview" to the section on Linguistics in *Semantics: An Interdisciplinary Reader in Philosophy, Linguistics and Psychology*, eds. Danny Steinberg and Leon Jakobovits (Cambridge: Cambridge University, 1971) 166.

⁴⁵See above, p. 24.

⁴⁶*Structures*, 34-48; *Issues*, 34-50; also "Three Models," 120-23.

⁴⁷The asterisk * is used in front of a string to indicate that it is grammatically unacceptable.

⁴⁸*Structures*, 44.

⁴⁹Maclay, "Overview," 166.

⁵⁰Chomsky, *Issues*, 13.

⁵¹For his sample list see Harris, "Discourse Analysis," 375-76.

⁵²*Topics*, 51-2 for terminology; a brief account is found in *Structures*, 61-84; a more detailed discussion is presented by Noam Chomsky, "A Transformational Approach to Syntax," in *Proceedings of the Third Texas Conference on Problems of Linguistic Analysis in English*, 1958, ed. Archibald A. Hill (Austin, Texas: University of Texas, 1962), reprinted in Fodor and Katz, *The Structure of Language*, 211-45, from which references are taken.

⁵³Chomsky, "A Transformational Approach to Syntax," 223.

⁵⁴This is formulated in terms of Chomsky's theory in *Structures*, but is seen more clearly in his "A Transformational Approach to Syntax," 229-30. The actual example is on page 237. The details of the transformations for (12) and (13) are more involved and will not be presented here. They are summarized in Chomsky and Miller, "Finitary Models of Language Users," 476-80.

⁵⁵For other discussion of issues debated after *Structures* see *Current Issues in Linguistic Theory*; *Topics in the Theory of Generative Grammar*; and *Language and Mind*, Ch. 2.

⁵⁶For his description see Chomsky, *Aspects*, 79-111, 164-92.

⁵⁷Morris Halle and Noam Chomsky, *The Sound Pattern of English* (New York: Harper & Row, 1968).

⁵⁸See John Lyons, "Generative Syntax," in *New Horizons in Linguistics*, ed. John Lyons (Baltimore: Penguin, 1970) 125; Lyons, *Noam Chomsky*, 87; John Searle, "Chomsky's Revolution in Linguistics," 14.

⁵⁹Chomsky, *Aspects*, 15-7.

⁶⁰But contrary to Chomsky, *Aspects*, 103-5, 132, the passive transformation apparently cannot be tied to a deep structure marker, but must rather be left as an optional stylistic transformation.

⁶¹In addition to *Aspects*, a more succinct presentation of the sequential application of T rules is found in Chomsky, *Topics*, 59-66.

⁶²In Noam Chomsky, *Studies on Semantics in Generative Grammar* (The Hague: Mouton, 1972), 62-119, hereafter *Semantics*, a collection of three articles, defending and partly expanding the theory of *Aspects*. "Deep Structure, Surface Structure and Semantic Interpretation" was written in 1968 (see bibliography, *Semantics*, 200), and included lecture material from 1966 (*Semantics*, 88, n. 20).

⁶³*Ibid.*, 75.

⁶⁴Chiefly McCawley, Lakoff and Fillmore, whose various articles are listed in the bibliography supplied with the article in *Semantics*, 118-19.

⁶⁵*Ibid.*, 69.

⁶⁶*Ibid.*, 88. This is the portion from the earlier lectures.

⁶⁷*Ibid.*, 107, 108. [This probably has more to do with the inherent features of "shall" and "will," as Bishop John Wallis observed long ago in his *Grammatica Linguae Anglicanae* (1660); now in a new edition with translation and commentary by J. A. Kemp, *Grammar of the English Language* (New York: Longman, 1972) 338-39. See also Julian Boyd and J. P. Thorne, "The Semantics of Modal Verbs," *Journal of Linguistics* 5 (1969) 59-74, especially the discussion of "will" and "shall" on pages 62-65.]

⁶⁸*Ibid.*, 113.

⁶⁹Noam Chomsky, "Some Empirical Issues in the Theory of Transformational Grammar," also in *Semantics*, 120-202 (again with a bibliography of all the papers and dissertations he responds to), where Chomsky again argues that many of the differences are more notational than substantial.

⁷⁰*Ibid.*, 180, 197.

⁷¹The frequently used example is: in EST the word "kill" is inserted into a basic string by a lexical transformation for a terminal item labeled V (with the proper feature markings such as transitive), whereas "generative semantics" wants the base phrase-structure to indicate "cause to be not alive,"

which EST considers the function of the lexicon and not the phrase-marker. For an exposition see George Lakoff's dissertation, *Irregularity in Syntax* (New York: Holt, Rinehart & Winston, 1970) 100. The most direct statement of the contrast is contained in Jerrold J. Katz, "Interpretive Semantics Vs. Generative Semantics," *Foundations of Language* 6 (1970) 220-59. A diagram contrasting the two is on 230-31 and Lakoff's example is treated on 244-45, 251-53. Katz condenses the issue thus:

The major difference . . . between the theory that subscribes to the hypothesis that there exists a level of deep syntactic structure and the theory that does not is that the former claims that the best choice of objects with which to begin the transformational process of generating representations of surface structure is also the best choice of objects with which to start in the process of generating semantic interpretations, namely, phrase-markers representing deep syntactic structure, whereas the latter claims that the best choice of objects with which to begin the transformational process of generating representations of surface structure is semantic interpretations themselves. Accordingly, these theories assign the role of being the primary link in the connecting of sound and meaning in natural languages to different aspects of syntactic structure. Generative semantics assigns this role to the syntactic relations expressed by the lexicon and transformational components, whereas interpretive semantics assigns this role to the syntactic relations expressed by the rules of the base subcomponent of the syntactic component (257).

Katz supports this by arguing the "semantic representations are linguistic universals" and "phonetic representations and surface phrase markers are highly language specific" (258) and it is the deep syntactic structure that "embodies the complex network of connections between the language universal and the language particular syntactic structures that must underlie the systematic correlation of sound and meaning" (259).

The fullest description of interpretive semantics is contained in Ray Jackendoff, *Semantic Interpretation in Generative Grammar* (Cambridge: MIT, 1972). Another Chomsky student actively defending EST is Adrian Akmajian ("Aspects of the Grammar of Focus in English" [Ph.D. dissertation, MIT, 1970]).

The subsequent discussion on this issue has dealt with various combinations of the deep, surface and "shallow" levels of structure which are involved in the semantic interpretation of a sentence.

⁷²Noam Chomsky, "Remarks on Nominalization," the other article in *Semantics* (11-61, written in 1967 [*Semantics* 200], which previously appeared in *Readings in English Transformational Grammar*, eds. Roderick A. Jacobs and Peter S. Rosenbaum [Waltham, MA: Ginn & Co., 1970] 184-221) 17.

⁷³Robert B. Lees, *The Grammar of English Nominalizations* (The Hague: Mouton, 1960).

⁷⁴*Ibid.*, vi.

⁷⁵See above, p. 28.

⁷⁶Lees, *The Grammar of English Nominalizations*, xvii.

⁷⁷E.g., 1) "factive nominal," i.e., *That* and *WH-* (who, what, where, why, when) clauses which, respectively, make an assertion (*That he came* was obvious), or answer a question (*What he did* was obvious); 2) "action nominal," i.e., *-ing* (His strong objecting . . .) and derived verbal (His strong objection . . .) constructions; 3) "agentive nominal," i.e., *-er* forms (buyer, seller); 4) "gerundive nominal," a more precise formulation of the *-ing* in 2); 5) "infinitival nominal," phrases with *to* used in various ways; 6) "abstractive nominal," e.g., *-ness*, *-tion*. He also dealt with some adjectival transformations which do not concern us here. His second main area of investigation covered "nominal compounds," which he analyzed as derived from various sentence-types. His model nominal compounds include *girlfriend*, *doctor's office*, *talking machine*, *assembly plant* and *steamboat*. (They certainly are not limited to two words; later discussion enjoyed using *jet engine replacement parts depot*.)

⁷⁸*Issues*, 47.

⁷⁹*Aspects*, 184.

⁸⁰*Ibid.*, 186.

⁸¹*Ibid.*, 219-220.

⁸²See n. 72, hereafter "Remarks."

⁸³"Remarks," 17.

⁸⁴*Ibid.*, 22.

⁸⁵*Ibid.*, 30.

⁸⁶Ibid., 60.

⁸⁷Thomas Wasow and Thomas Roeper, "On the Subject of Gerunds," *Foundations of Language* 8 (1972) 44-61.

⁸⁸Ibid., 45-6, where two sets of examples also are given.

⁸⁹Ibid., 58.

⁹⁰Joan Bresnan, "Theory of Complementation in English Syntax" (Ph.D. dissertation, MIT, 1972). See Joan Bresnan, "On Complementizers: Towards a Syntactic Theory of Complement Types," *Foundations of Language* 6 (1970) 297-321.

⁹¹The best initial discussion is found in Noam Chomsky, "Conditions on Transformations," in *Festschrift for Morris Halle*, eds. Stephen Anderson and Paul Kiparsky (New York: Holt, Rinehart and Winston, 1973) 232-86; reprinted in Noam Chomsky, *Essays on Form and Interpretation* (New York: Elsevier North-Holland, 1977) 81-160. The same approach is more fully developed in Noam Chomsky and Howard Lasnik, "Filters and Control," *Linguistic Inquiry* 8 (1977) 425-504. Chomsky's "On WH-Movement," in *Formal Syntax*, eds. Peter W. Culicover, Thomas Wasow and Adrian Akmajian (New York: Academic, 1977) 71-132, assumes this theory of COMP while addressing other issues.

⁹²"Filters and Control," 444.

⁹³Though originally this was meant to apply to every S, we will adopt it only for embeds.

⁹⁴"Filters and Control," 456.

⁹⁵"Conditions on Transformations," 237; "Filters and Control," 439.

⁹⁶Joseph Emonds, "Root and Structure-Preserving Transformations" (Ph.D. dissertation, MIT, 1970); now published as *A Transformational Approach to English Syntax* (New York: Academic, 1976). The importance of this work for Chomsky can be seen in Noam Chomsky, *Reflections on Language* (New York: Random House, 1975), ch. 3 and in "Filters and Control."

⁹⁷In addition to the references cited in n. 91 and n. 96, the balance of *Essays on Form and Interpretation*, especially his summarizing Introduction and "Conditions on Rules of Grammar," 163-210, reprinted from *Linguistic Analysis* 2

(1976); and lecture four in the forthcoming *Rules and Representations*, the 1979 Kant Lectures delivered at Stanford University, Palo Alto, CA, January 1979.

⁹⁸"Conditions on Rules," 205; "On WH-Movement," 72.

⁹⁹Emmon Bach, "Comments on the Paper of Chomsky," in *Formal Syntax*, 133-55.

¹⁰⁰E.g., David Lightfoot, "On Traces and Conditions on Rules," in *Formal Syntax*, 207-38.

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¹For a sample see the current issues of any of the linguistic journals cited in the previous chapter.

²The first place where one might expect evidence of such work to appear is in the papers presented at the annual meeting of the Society of Biblical Literature, especially to its Linguistic Group. However, those papers and discussions that incorporate a specific linguistics are almost invariably interested in some kind of structural or discourse analysis of biblical texts. Only at the most recent meeting (November 1978) was there any indication by several participants of an awareness of the challenge of TG grammar to the dominant structuralist mode.

³Sponsored by the Center for Hermeneutical Studies in Hellenistic and Modern Culture at the Graduate Theological Union in Berkeley, CA. Edward C. Hobbs is director of the project, for which Irene Lawrence and Daryl Schmidt have been Research Fellows.

⁴By Edward C. Hobbs with Irene Lawrence and Daryl Schmidt (Berkeley: GTU, 1977, revised 1978), hereafter *Outline Grammar*.

⁵For the most part these follow the conventional rules of TG grammars, i.e., they would be close to the PS rules for Universal Grammar. The primary departure from current TG grammar is in the treatment of NP within VP by rules (1d) and (1e), which reflects the linguistic theory developed by Edward Hobbs in the *Outline Grammar* (p. 2.61) that *every* NP in VP is an adverbial and that the oblique case ending of such an NP is affixed as part of a surface-level transformational cycle that assigns a morphological feature to the adverbial function of the NP. E.g., the accusative NP ("the direct object") is characteristically an adverbial of limit/extent. Likewise, prepositions are treated as preposed ("Chomsky-adjoined") adverbial-markers, also part of the same cycle.

⁶See above, p. 37.

⁷For a good discussion and summary of the various arguments and issues involved in subcategorizing verbs see chapter 9 in Adrian Akmajian and Frank Heny, *An Introduction to the Principles of Transformational Syntax* (Cambridge: MIT, 1975), hereafter Akmajian and Heny.

⁸For Chomsky's formalization see "The Structure of the Lexicon" in Chomsky, *Aspects*, 164-92, especially 164-70.

⁹Lists of such verbs can be found in Robertson, 1034-36, and Blass-Debrunner, 204-5.

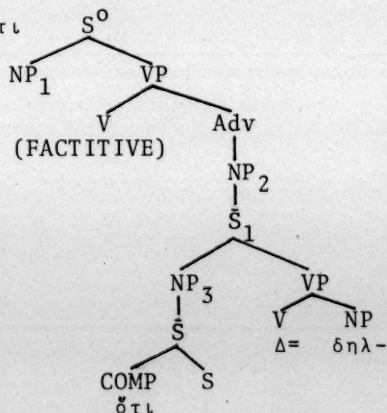
¹⁰Henry G. Liddell and Robert Scott, eds., *A Greek-English Lexicon*, revised by Henry S. Jones and Roderick McKenzie (Oxford: Clarendon, 1968), hereafter Liddell-Scott, 385.

¹¹See p. 57.

¹²See Herbert W. Smyth, *Greek Grammar*, revised by Gordon M. Messing (Cambridge: Harvard University, 1920, 1956), hereafter Smyth-Messing, 245; Moulton-Howard, 394. The label "Factitive" is not to be confused with the "factive" presupposition discussed in Paul Kiparsky and Carol Kiparsky, "Fact," in Manfred Bierwisch and Karl E. Heidolph, eds. *Progress in Linguistics* (The Hague: Mouton, 1970).

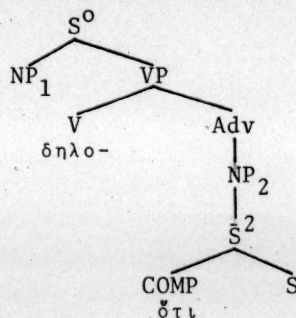
¹³In order to express these relationships more explicitly we present the following set of PS diagrams as a working hypothesis, given here only in outline with the details left for further investigation. For the deep structure (initial PM) for (5c), we suggest (5ci):

(5) (c)i εδηλώθη . . . ὅτι



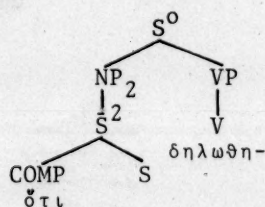
$\bar{S}^1$ by itself corresponds to (5b): $\delta\tau\iota \dots \delta\eta\lambda\omicron\nu$. $\bar{S}^1$ can also be embedded into a VP whose primary feature marker is +FACTITIVE. There are two transformations possible for +FACTITIVE: 1) insert a lexical verb that can have +FACTITIVE as its primary feature -- in Greek, $\pi\omicron\iota\epsilon\omega$ (see Mt 26:73), or 2) insert a lexical form of the embedded VP which has that feature -- in Greek, $\delta\eta\lambda\delta\omega$, resulting in a structure like (5cii):

(5) (c)ii



In the transformational process several nodes ($\bar{S}^1$ and NP_3) have been deleted. This operation has been established on other grounds as part of the TG linguistic theory. (See John Robert Ross, "A Proposed Rule of Tree-Pruning" in David A. Reibel and Sanford A. Schane, eds. *Modern Studies in English* [Englewood Cliffs, N.J.: Prentice-Hall, 1969].) When T_{PASS} is applied to (5cii) the result is (5ciii):

(5) (c)iii

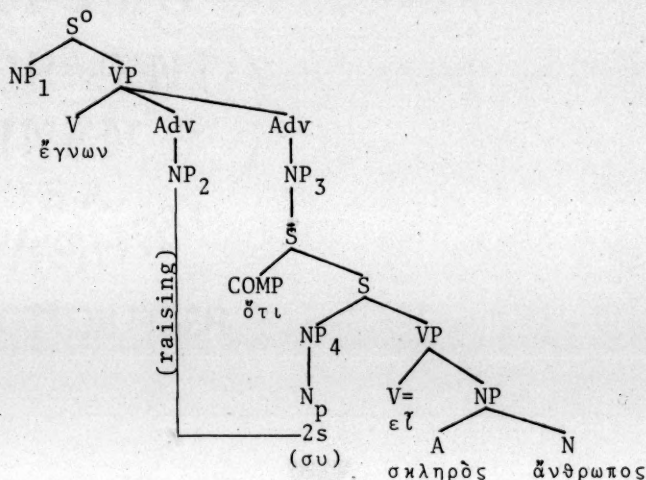


i.e., $\bar{S}^2$ (the original $\delta\tau\iota$ -embed) is again functioning as the subject of a VP, similar to (5c), which is passive, similar to (3b), whose stem is $\delta\eta\lambda$ -, similar to (5b) and to the original $\bar{S}^1$.

¹⁴The rule of grammar involved is: the more determined of the two nominative NPs is the dominant NP (functioning as subject), but that is still not self-evident here.

¹⁵See the discussion in Akmajian and Heny, chapter 9, especially the diagrams on p. 336, which involve the syntax of our "cognition" verb class.

¹⁶Thus



¹⁷Many of the instances of this construction are subject to scribal alteration, though not the following: Jn 3:21; 8:54; 9:8; Ac 4:13; 1 Cor 3:20; 14:37; 16:15; Gal 1:11, 1 Th 2:1; 2 Th 2:4.

¹⁸See C. H. Turner, "Marcan Usage," *Journal of Theological Studies* 28 (1927) 9-15.

¹⁹We have not cited any versions because in principle each language has its own embedding devices, so lack of a word explicitly corresponding to *οτι* is not direct evidence that *οτι* was lacking in the manuscript being translated; thus the translator may simply have been using a different embedding transformation, either by choice or by limitation of the language.

²⁰In light of the discussion below on deleting *οτι* with Commands, and since the repeated statement here is also a Command, we would suggest that the reading without *οτι* is in fact the correct reading and therefore this example should not be part of the list, for the same reason that Jn 5:11, 12 are not. This further indicates the general overall accuracy of P⁷⁵ in contrast to P⁶⁶.

²¹The other apparent exception is Jn 9:17 ὁ δὲ εἶπεν ὅτι προφήτης ἐστίν, where ὅτι is persistently interpreted as introducing direct discourse. However, since John never uses it elsewhere in that way, some other explanation must be sought. It should be seen in the context of giving an answer to the preceding question: τί σὺ λέγεις περὶ αὐτοῦ, ὅτι ἠνέφξεν σου τοὺς ὀφθαλμούς;. This ὅτι is usually taken as an awkward causal with the sense "with regard to the fact that." (See Rudolf Bultmann, *The Gospel of John: A Commentary* [Philadelphia: Westminster, 1971] 334, which refers to a special Hebraic use cited in Blass-Debrunner; and C. K. Barrett, *The Gospel According to John* [London: SPCK, 1960] 298, which refers to a special category in Liddell-Scott for certain passages in Plato!) Our analysis of the stylistic use of ὅτι in Johannine discourse suggests that the more likely syntax of 9:17 is as follows: τί λέγεις ὅτι S = "Why do you say S," where S is the response the formerly blind man had given to the earlier question πῶς ("How?"), viz., he explains the actual process of *how* Jesus made mud, etc. After repeating this twice (9:10-11 and 9:15), the question is clarified, πῶς δύναται ("How is it possible?") and then rephrased, τί λέγεις ὅτι S ("Why do you keep saying S?") with ὅτι functioning to embed indirect discourse. The answer (ὁ δὲ εἶπεν) is then ὅτι προφήτης ἐστίν ("Because he is a prophet."), i.e., ὅτι is part of the direct discourse, in response to τί, and not the embedding device of quotation marks, as it is usually assumed to be. We see this same use of ὅτι in answer to τί in Mt 13:11; Lk 15:27; 19:34, though it is seldom ever so translated.

²²This is not really in the form of the original statement but is itself modelled after 1:30 by the redactor. See Raymond E. Brown, *The Gospel According to John* vol. I (Anchor Bible; Garden City, N.Y.: Doubleday, 1968) 35.

²³This is the only example on this list that is part of a narrative section and not discourse. Thus many scribes thought that ὅτι was necessary with the repeated discourse.

²⁴See n. 19.

²⁵Blass-Debrunner, 247.

²⁶See Bernard P. Grenfell and Arthur S. Hunt, eds. *The Oxyrhynchus Papyri* vol. XIV (London: Egypt Exploration Society, 1920) 144:

ᾧπου ἡπάντηκά σου . . . καὶ εἶρηκα σου ᾧτι ὁδὸς ἐμοὶ κέρμα
. . . , καὶ εἶπες με ᾧτι

When I met you . . . and said to you, "Give me some money . . . ," and you said to me, ". . . ."

²⁷Compare lines 8-9:

γινώσκιν σε θέλω, κυρία μου ἀδελφή, ἀπελθε
I want you to know, my dear sister, Go

and line 13:

οἶδες καὶ σὺ ὅτι οὐδὲν ἔχωμεν
You too know that we have no

²⁸Curiously, all three editions of *The Greek New Testament* of the United Bible Societies do omit ὅτι at Mk 4:21, but include it at 8:4.

²⁹See our discussion above on the Johannine material.

³⁰Blass-Debrunner, 247. The error is in the German also --it is not a typographical error in the English translation.

³¹See Frederic G. Kenyon, *The Chester Beatty Biblical Papyri. Fasciculus III Supplement. Pauline Epistles. Plates.* (London: Emery Walker, 1937) folio 14 verso.

³²For lists of such verbs in the New Testament see Moulton-Turner, 103-4, and Blass-Debrunner, 199-200; for the papyri, see Robert C. Horn, *The Use of the Subjunctive and Optative Moods in the Non-Literary Papyri* (Philadelphia: University of Pennsylvania, 1926) 103-116.

³³See the suggested "Auxiliary Features" of Modal, Aspect and Time in Hobbs, *Outline Grammar*, 4.01, which are to be distinguished from "auxiliary verbs." The auxiliary feature "Modal" is a gradient marked from weak to strong along a scale of VOLITION/POSSIBILITY. The feature marking is then transformed into either a morphological marking or into a chaining verb (sometimes called "catenative" and traditionally "auxiliary verb"). E.g., the weak VOLITION marking *Wish* is transformed into either an optative form of the matrix verb or into a chaining verb--θέλω/βούλομαι--with the infinitive form of the matrix verb. *Command* is the strongest VOLITION marking and is transformed into subjunctive and imperative forms.

³⁴The entire matter of the AUX node is only now beginning to receive widespread linguistic attention, so there is still much flux in the terminology used. For a discussion of modality using binary gradients corresponding to VOLITION and POS-

SIBILITY see Geoffrey Leech, *Towards a Semantic Description of English* (London: Longman's, 1969) 203-5; Randolph Quirk, Sidney Greenbaum, Geoffrey Leech and Jan Svartvik, *A Grammar of Contemporary English* (New York: Seminar Press, 1972) 97-102. A somewhat different notational system is used for analyzing essentially the same modal markings in Julian Boyd and J. P. Thorne, "The Semantics of Modal Verbs." However, they confine "modal" to the mark of the "illocutionary potential of the sentence," which is roughly equivalent to VO-LITION (on the part of the speaker), by distinguishing it both from the feature marking +NECESSITY and from the marks of sentences whose only illocutionary potential is "statement," which together roughly correspond to POSSIBILITY. For a quite different analysis of the "pragmatics" of modality see Asa Kasher, "Mood Implicatures: A Logical Way of Doing Generative Pragmatics," *Theoretical Linguistics* 1 (1974) 6-38.

³⁵Also fading from regular use was $\omega\varsigma$ as COMP for declarative embeds in "cognition" phrases, while $\pi\omega\varsigma$ was just beginning on the course that led it to become the main COMP of Modern Greek (as $\pi\omega\varsigma$). For a discussion of these see A. N. Jannaris, "Misreadings and Misrenderings in the New Testament. III," *The Expositor* V (1899) 142-53; Moulton-Turner, 137; Blass-Debrunner, 203.

³⁶See the discussion of the question transformations in Hobbs, *Outline Grammar*, 5.21-22, 5.31.

³⁷See pp. 73-4.

³⁸See pp. 77-8.

³⁹Recent literature generally contrasts these as "non-modals" and "modals," because the latter are transformed into "modal verbs" in English. However, if we want to talk about the modality of each sentence apart from its morphology, we lack appropriate labels. We have chosen to use a suggestion that originated in Julian Boyd's seminar on AUX (Fall, 1978, University of California, Berkeley, in discussion between Boyd and Hobbs) that "indicative" be used as the label for the "non-modal" modals (with the accent to distinguish it from the "indicative mood" as a morphological label).

⁴⁰Traditional grammars see this as Hellenistic confusion. See Moulton-urner, 49: "Confusion of relative and interrogative pronouns is usual in Hellenistic Greek."

⁴¹The vowel is usually *omicron*, as in $\delta\varsigma$, $\delta\tau\iota$ and $\delta\pi\omega\varsigma$, though lengthened to *omega* in $\omega\sigma\tau\epsilon$. The origin of the $\iota\nu\alpha$ form is unknown, and since there are no other ι -forms anywhere in the COMP category, it is likely that it originated by analogy to the δ -forms. See Karl Brugmann, *Griechische Grammatik*, 285.

⁴²Chomsky formulates this as $\pm WH$. See above, p. 60.

⁴³"The interrogative use of $\epsilon\iota$ is derived from the conditional meaning *if*," Smyth-Messing, 602 (§2671.b).

⁴⁴Jannaris suggests that this use of $\epsilon\iota$ in the New Testament is really a scribal misreading of η , which is other times misread as η . See A. N. Jannaris, *An Historical Greek Grammar* (London: Macmillan, 1897) 478. If Jannaris is correct the likely New Testament examples are Mt 12:10; 19:3; 20:15; Mk 8:23; Lk 13:23; 22:49; Ac 1:6; 7:1; 19:2; 21:37; 22:25; 23:9.

⁴⁵Smyth-Messing, 604, gives one example of each from Aeschines (1.84; 2.36) and there is a papyrus example (3rd century B.C.) in Edwin Mayser, *Grammatik der Griechischen Papyri aus der Ptolemäerzeit* II.3 (Berlin: Gruyter, 1934) 53:

P Hal 8.6 προσάγαγε αὐτόν, ὅπως ἐπισκέψωμαι καὶ αὐτός, $\epsilon\iota$
μὴ δύναται τὴν χρεῖαν παρέχεσθαι (232a)

Bring him in so that I myself may observe whether he is not able to render service.

⁴⁶Lists of such verbs are found in Moulton-Turner, 137-8, and in Blass-Debrunner, 204.

⁴⁷It is characteristic of the traditional discussions of "style" that Luke's preference for infinitive constructions is not even mentioned in the chapter on "The Style of Luke-Acts" in Moulton-Turner, *Style*, 45-63, nor in the section on "The Language and Style of Acts" in Ernst Haenchen, *The Acts of the Apostles: A Commentary* (Philadelphia: Westminster, 1971) 72-81.

⁴⁸On the parallel use of $\iota\nu\alpha$ and Inf , see Ernest De Witt Burton, *Syntax of the Moods and Tenses in New Testament Greek* (Chicago: University of Chicago, 1900; reprinted, Grand Rapids: Kregel, 1976), hereafter Burton, 87-92.

⁴⁹For a thorough discussion of semantics in a TG framework, see Jerrold J. Katz, *Semantic Theory* (New York: Harper & Row, 1972).

⁵⁰Such use is common in the papyri. See Moulton-Milligan, 598.

SUMMARY AND CONCLUSIONS

¹For an initial application of this to one particular New Testament problem, see Daryl Schmidt, "Pauline Syntax: The Transformational Patterns of 1-2 Thess," paper read at meeting of the Society of Biblical Literature, New Orleans, LA, November 1978.

APPENDIX I

CATEGORY SYMBOLS AND INSTRUCTION SYMBOLS

E.C.HOBBS

A	adjective or adnominal	v_{md}	verb in middle voice
AP	adjective phrase	v_{sj}	verb in subjunctive mood
Adv	adverb or adverbial	v_{op}	verb in optative mood
AdvP	adverbial phrase	v_{mp}	verb in imperative mood
<Ap>	appositive	v_{pt}^{ps}	passive participle (etc.)
Asp	aspect (node of Aux)	VC	verb chain
Aux	auxiliary (node of S)	VP	verb phrase
C	connector	VPif	infinitive phrase (etc.)
Cc	conditional ($\supset$)		
Cd	disjunction ($\vee$)	π -	marker for π - function (in PM^D)
Cj	conjunction ($\&$)		
Cp	comparison ($>, <$ "more, less		
C=	equivalence ($\equiv$)	than")	
Comp	complementizer		
D	determiner	Δ	dummy terminal symbol
Da	article	$\Delta=$	dummy equative
Dd	demonstrative		
De	emphatic	PM_D	phrase marker
Dn	nominal	PM^D	deep structure phrase marker
Dq	quantifier	PM^S	("initial phrase marker")
			surface structure phrase marker
M	modal (node of Aux)		
N	noun or nominal	$\rightarrow$	"Rewrite left symbol as right symbol(s)" [P-S rule]
N^n	noun in nominative case		
N^q	noun in oblique case	$\Rightarrow$	"Transform string on left to string on right" [T rule]
N^g	noun in genitive case		
N^d	noun in dative case		
N^a	noun in accusative case	$\Rightarrow$	"Transform item on left to item on right [as part of a T rule]
N^v	noun in vocative case		
NP	noun phrase	+	sequential concatenation ("Connect categories in this order")
NP^x	noun phrase in various cases		
Np	pronoun	-	sequence unspecified in PM^D
Neg	negative		(used to describe actual sentences without formalizing sequence)
[P]	letter reserved for "phrase", as in "noun phrase", etc.		
Pr	preposition	#	boundary symbol
PP	prepositional phrase		
Q	marker for "question"	$\sim$	denial or negation ("not")
S	sentence	ϕ	null symbol ("delete")
$\bar{S}$	embedded sentence		
$S^1, S^2, S^3, \dots$	embedded sentences within a single sentence (S^0 used for matrix)		
T	transformation		
T_{xxx}	specific transformation	$\cap$	common element ("intersection")
Tm	time (node of Aux)	$\equiv$	equivalence or identity
V	verb	$\supset$	"if--then" ($p \supset q$, "if p, then q")
V=	equative verb	()	optional item(s)
Vif	infinitive	{ }	items so enclosed form a set
Vpt	participle	/	items so separated are disjunctive
Vnt	intransitive verb		(alternative members of the set)
Vtr	transitive verb		
Vc	chaining verb		
V=if	infinitive of equative verb (etc.)		
v^{ps}	verb in passive voice	--or--	
			= "in the environment of"

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